Measurement and Classification rules of the Deccan Gujarat etc. 1917

SUBJECT-INDEX.

PART I.

THE "JOINT REPORT" AND CORRESPONDENCE RELATING THERETO.

SUBJECT-INDEX TO THE JOINT REPORT.

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PART I.

THE JOINT REPORT.

From

H. E. GOLDSMID, Esq., }
Captain G. WINGATE, } Superintendents of Survey;
Captain D. DAVIDSON, }

To

E. H. TOWNSEND, Esq.,
Revenue Commissioner, Southern Division.

Sir,

In obedience to instructions from Government, conveyed in the letter noted in the margin, we have assembled at Poona for the purpose of taking into consideration "the best means for bringing the somewhat diversified operations of the several revenue surveys of this Presidency into conformity, as far as practicable," and also "for ensuring the results of the surveys being turned to the best account, and maintained in their original integrity in the future management of the districts," upon which points we do ourselves the honour to submit, for the consideration of the Honourable the Governor in Council, the following Report.

Dated 10th April 1847, No. 864.

2. Descriptions, more or less complete, of the modes of operation in use on the three surveys have been at different times already submitted to Government; but subsequent to the dates on which these were written, modifications of the then existing practices have been from time to time introduced, so that the descriptions referred to now present an imperfect and, from the circumstances which called them forth, an unconnected view of the several systems. But in preference to entering into a minute detail of the methods of procedure followed at present on the several surveys, we shall proceed to describe, in compliance with the intentions of Government, the principles of that system of survey which, on a full consideration of the merits and peculiarities of the existing practices, we deem best suited for general adoption, and to be considered the standard for future operations, in so far as local peculiarities may admit.

3. A full consideration of the points mooted by Government would seem to require, in addition to the description of the system of survey and assessment, some notice of the objects to be accomplished by it, as it is only by a full comprehension of the end to be attained that we can judge of the merits of the means employed. We propose, therefore, before proceeding to describe the plan of survey we have to recommend, to submit a few observations illustrative of the system of revenue administrations to which our operations are subservient.

4. The chief design of a revenue survey may be defined to be the regulation of the customary land tax, so that it shall at once secure an adequate revenue to Government, the progressive development of the agricultural resources of the country, and the preservation of all proprietary and other rights connected with the soil. In the districts hitherto surveyed, or under survey by us, the whole land, as generally throughout India, appertains to villages; and the lands of each village are divided into fields or estates, held upon various tenures, or unoccupied, but which, in respect of taxation, may be classed under the three heads of *rent-free*, *partially assessed*, and *subject to the standard assessment*.

5. Under our Government the revenue management of the districts alluded to has generally been ryotwar, but without joint responsibility, each cultivator being liable only for the land he cultivates, and renewing his engagement with Government from year to year. In some districts each field, or sub-division of the village lands, had its particular assessment, which was either fixed or settled from

time to time, and the cultivators had, or were supposed to have, the right of relinquishing, when so disposed, any of the fields contained in their holdings, and obtaining a reduction of their liabilities, equivalent to the assessment of the lands so relinquished; in others the assessment was laid upon the entire holding of the cultivator, instead of its component fields; but in both cases the practical exercise of the right of the cultivator to relinquish any part of his farm at the expiration of his annual engagement was greatly restricted by the injudicious interference of our native revenue servants, through their anxiety to keep up the cultivation and revenue of the villages or districts over which they had control.

6. The superior advantages of the field assessment over that by which the assessment is placed on the whole lands of a village, or the entire holdings of individuals or co-parceners, whether proprietors or occupants, have been already so fully stated by two of our number in their joint report quoted in the margin, and are so generally admitted by the Revenue Officers of this Presidency, that we deem it unnecessary to enter upon any very detailed exposition of them here. It may be permitted us to remark, however, that one manifest advantage of breaking up the assessment of a village into portions so minute is the facility it affords to the cultivators of contracting or enlarging their farms from year to year, according to the fluctuating amount of agricultural capital and stock at their disposal, which is of incalculable importance to farmers possessed of so limited resources as those of the cultivating classes throughout India.

From Messrs. Goldsmid and Wingate, to Sole Revenue Commissioner, No. 1, dated 27th October 1840.*

7. The loss of a few bullocks by disease or other causes may quite incapacitate a ryot from cultivating profitably the extent of land he had previously in tillage, and without the privilege of contracting the extent of his farm, and consequent liabilities on occasion of such losses, his ruin would be very shortly consummated. It is for this reason that there would be no advantage, but the contrary, in binding down the cultivators by long leases, as has often been recommended. The only advantage of a long lease to a farmer is the security it affords against any increase of rent or assessment during its continuance; while on the other hand it has the disadvantage of increasing his risks and liabilities in proportion to the length of the period for which it makes him responsible for the rent or assessment. The longer the lease, the greater scope for the employment of capital, but the greater the liabilities of the farmer and risk of failure. With farmers of large capital the security of tenure will overbalance the risk; but with farmers of small capital the case will be reversed; and for the latter class of men in any country it may safely be predicated that long leases, binding them to pay an invariable rent for a long series of years, are quite unsuitable.

8. To all classes of farmers, however, whether rich or poor, the tenure which affords the greatest security against increase of rent, with the least extent of liability and risk of loss, is undoubtedly that most favourable to the interests of the agricultural classes, and to the progressive increase of farming capital; and it is evident that this can only be effected by shifting the risk from the tenant to the landlord, and securing to the former all the advantages and security of a long lease without its attendant liabilities. In countries where the land is divided into properties of limited extent, landlords could not be expected to incur this risk when it is so easy to shift it on their tenants and secure their own rents; but the case is altogether different when the whole or a large portion of the land-rent is levied by Government. In the latter case the interests of the rent-payer and rent-receiver are identical. With a Government the question is not the certainty and amount of rent derivable from one estate without reference to aught beyond its boundaries, but from the country at large. The land tax is obtained, not from a few individual farmers, but from the whole agricultural community, and its amount will fluctuate with the circumstances of the latter. With every diminution of the total amount of capital employed in agriculture the land revenue will decline; with every increase it will improve. The maximum of farming capital and land revenue will be the same, as will also be their fluctuations.

* *Vide* p. 51 of this volume.

It appears, therefore, that in opposition to the case of an ordinary landowner, Government incurs neither risk of loss nor additional liabilities by giving the cultivator all the advantages of a long lease, and at the same time relieving him of its attendant disadvantages.

9. The important end here pointed out we believe to be fully attained by the fixed field assessment of our surveys administered by annual leases. The cultivator's title to the occupation of his fields is indestructible while he continues to discharge the assessment laid upon them, though his engagement for each be annually renewed; and by placing the assessment upon each field instead of on his whole holding, he is enabled, when circumstances make the course desirable, to relinquish any of the former, or take up others which may be unoccupied, so as to accommodate the extent of his liabilities to his means to meet them. The fixed field assessment for the term of thirty years, introduced by our surveys, thus secures to the cultivator the full advantages of a thirty years' lease, without burdening him with any condition beyond that of discharging the assessment for the single year to which his engagement extends. He has thus all the security of tenure which the longest lease could confer, without the attendant liabilities and risk, which his limited capital and precarious circumstances would be quite inadequate to meet.

10. The main objects, then, of our surveys is the imposition of a field assessment, and we are now to consider the most suitable means for accomplishing this.

11. The first question presenting itself for consideration is the definition of the field. In every village, as already stated, there are recognized sub-divisions of the village lands, which, for the most part, have distinctive appellations, and have existed from time immemorial. Many of these, however, known as Thals, Tikas, Daghs, and by other denominations, are of large size, and in the possession of several individuals. Their external boundaries may be considered permanent, but the limits of their interior portions, in the possession of distinct parties, are subject to change, through the operation of sales, transfers, annexations, partitions, and so forth. Occasionally also an old sub-division, though of large size, may be held by a single individual of larger means than usual; another, again, though not beyond, and even within the average size, may be partitioned very minutely amongst a numerous co-parcenary, especially in the case of Miras lands, which are inherited by the Hindu common law of equal partition among the male descendants, on the death of the common ancestor. Such minor sub-divisions are continually subject to change from the causes just mentioned and others; and, finally, large tracts of waste, and even cultivated lands, in which all trace of the original sub-divisions has been lost, are not uncommon.

12. To secure the advantages of the field assessment described in our preceding observations, it is obviously requisite that the fields upon which the assessment is distributed should be of a size suitable to the circumstances of the cultivators, so as to admit of their being readily cultivated by ryots of limited means. This could not be accomplished by constituting the ancient Thals and Daghs into fields, as these would be generally too large for our purpose; while, on the other hand, to make a field of every one of their interior sub-divisions, as they exist at the time of survey, would greatly increase the labour and expense of the operation without an adequate object; for such holdings are subject to frequent change, as already explained, and no advantage that we are aware of is to be gained by making permanent a state of things which, though representing at the time of survey the distribution of the village lands amongst the members of the community, would not continue to do so after the lapse of a very few years.

13. In the division of the village lands into fields the chief points to be kept in view appear to be—

1st.—That the fields, or at least a majority of them, should not be larger than may be cultivated by ryots of limited means.

2nd.—That they should not be made smaller than is necessary for the above object without an adequate reason.

The former of these points may readily be determined by the extent of land capable of being cultivated by a pair of bullocks, as farming cannot be prosecuted at all with a less number than this. When a ryot has only a single bullock he must enter into partnership with a neighbour, or obtain a second by some means or other, in order to be able to cultivate at all.

14. The extent of land capable of being cultivated with a pair of bullocks will vary according to climate, soil, description of cultivation, and methods of husbandry. In very dry climates, as the Deccan, where the soil is kept free of grass and weeds with comparative ease, the extent of the land will be greater than in moister districts, where vegetation is more vigorous, other circumstances connected with the cultivation being the same. A larger breadth of light, friable soils may of course be kept in tillage with the same labour than of heavier descriptions. In districts where manure is generally applied to the soils, the area capable of being cultivated will be much less than when no manure is applied. The difference between dry-crop and irrigated lands will be still greater.

15. The actual extent of the several descriptions of land capable of being cultivated as above may, however, be easily ascertained in the case of any district about to be surveyed. Let us suppose, for the sake of illustration, the following to be the number of acres cultivable by a pair of bullocks in a particular district :—

20	acres of	light	dry-crop soil.
15	,,	medium	,,
12	,,	heavy	,,
4	,,	rice land	,,

These areas would, we are of opinion, form the most convenient size of fields as a general rule, but other circumstances require consideration.

16. It is of much importance that the existing state of things in any village should be as little interfered with as conveniently practicable, and consequently that the holdings of different proprietors and cultivators, and land held upon different tenures, should not, when avoidable, be included in the same field; and though cultivators possessing only a pair of bullocks are numerous, those with a greater number are more numerous still: so that fields of double the size of the standard we have proposed might be cultivated and made the subject of transfer, etc., without difficulty.

17. On taking into account these and various other circumstances affecting the question, but which could not be clearly explained without entering into a greater detail than would be suitable in a report such as this, we are led to propose the following general rules for the division of village lands into fields :—

Rules.

1st.—The number of acres for each description of soil and culture, capable of cultivation by a single pair of bullocks, having been determined, the size of the fields should be so regulated as to contain from this to double this number of acres.

2nd.—The preceding rule does not apply to tracts of land incapable of cultivation or unsuited for it in their present state, from the presence of dense jungle or other obstructions, which should be divided into as large portions as may be convenient.

3rd.—Land held upon different tenures, as Miras, Gatkul, Inam, Judi, etc., should be measured separately, and not together, in the same field, even when of smaller area than required by Rule 1.

4th.—Different kinds of culture, as dry-crop, rice, garden, etc., when in conformity with the usage of the district, should, as far as conveniently practicable, be measured into distinct fields.

5th.—Every holding* falling within the limits prescribed in Rule 1 should be constituted a survey field.

6th.—Every holding in excess of these dimensions should be divided into two or more fields, so as to bring the area of each within them.

7th.—When a holding is of less area than the limit laid down in Rule 1, and there are other holdings on the same tenure contiguous to it, and also of less area than the rule prescribes, so many of these are to be clubbed together to form a new field as may be requisite to bring the acres of the latter within the limit, but no more.

8th.—When a holding of less area than required by Rule 1 does not adjoin another holding similarly circumstanced, it should be made a separate field notwithstanding its deficient size.

18. These rules would preserve the existing divisions of the land to as great an extent as seems necessary or desirable, for the sub-divisions of any large holding under Rule 1 into fields of a convenient size for cultivation will in no way affect the existing rights of the occupant, as the external boundaries and extent of his land will remain unchanged. The only other case, in which existing usage could at all be interfered with, is that of two or more inconveniently minute holdings being thrown into one survey field under the provisions of Rule 6; but such instances would be of rare occurrence, and the field thus formed so small, that there would be no difficulty whatever in arranging for the payment of its assessment by the several shareholders.

19. The size of the holdings having been determined, the next question that suggests itself is the best mode of defining their limits, and of securing the preservation of the boundaries when defined.

20. A continuous ridge or mound of earth encompassing the field is doubtless the best boundary; but such was found on trial to be too expensive, and a system of partial ridging at the angles, and at intervals along the sides, with stones sunk at the corners and bends, has proved sufficient for practical purposes.

21. The number and size of these marks must be regulated by local circumstances, and we do not therefore propose any specific rule on the subject further than that they ought to be of size and in number sufficient to define distinctly the limits of the fields on the completion of the survey. These marks, whatever may be the labour and cost of their construction, we consider essential to the usefulness and permanency of the survey operations. Their due preservation and improvement will form one of the most important points connected with the future administration of the survey settlements, and will receive our attention when treating of the latter subject in the sequel of this report.

22. The division of the village lands being subsidiary to the allotment of the entire area of a district into villages, the determination and definition of village boundaries becomes a most desirable preliminary to the former operation. This measure is urgently called for, not merely with respect to its bearing on the survey, though this is most important, but in order to put a period to the numerous cases of disputed boundaries, which have not only been fruitful causes of ill-feeling and contention between the disputing parties, but have also entailed a serious loss of revenue to Government, by preventing the cultivation of extensive and often valuable tracts of land.

23. The existence of an unworkable enactment (Regulation X of 1827) for the settlements of these disputes, and the failure of several attempts to obtain a more efficient law, added to the increasing obstruction to the survey operations caused by the frequency of such disputes in particular districts, compelled the officers in charge to resort to some practicable mode of settlement, and these attempts proved that the main hindrance to their settlement

* By "holding" we mean any field, estate, or occupancy, contained within a continuous line of boundary, and in the possession of one person or co-parcenary.

before had been the undue importance attached to them, and that no insurmountable or even serious obstacles stood in the way of their adjustment; while the recent law (No. III of 1846) for the construction and preservation of bonda ry-marks affords ample security against the revival of any disputes once settled by the Survey Department.

24. All the more important of these disputes are of long standing, and in the majority of cases the land has been waste from time immemorial, and rendered of little value to any party by having been converted into a contested grazing ground for the cattle of the several villages claiming any part of it. There is generally no evidence whatever in proof of the original limits, beyond a few vague entries in some of the old village papers, which, even if we could depend upon their authenticity, cannot be relied on as affording a true statement of the extent of the dispute at the time they were written, since it was frequently the interest and practice of the village accountant to enter the dispute as larger than it really was, in order to obtain from Government a correspon ding deduction from the rental due from the village.

25. Such being the case, it seems aiming at impossibilities to attempt to restore with exactness the original boundaries; and any expensive or elaborate investigations having this object in view would prove labour in vain, and would, by investing the case with undue importance, be found to strengthen the animosity of the contending parties, and to excite on both sides a renewed desire for victory; so that the very elaborateness of the means taken to secure a just decision, instead of promoting that end, would seem to raise an additional barrier in the way of a satisfactory settlement. The less importance therefore attached by the authorities to these disputes, the more readily will their adjudication be effected and acquiesced in. Moreover, the partition of the disputed land, however made, can hardly fail to confer a benefit on all the parties interested, by enabling them to bring their assigned portions under cultivation, and to obtain a certain and often valuable return, in place of a contested pasturage shared by all, and conferring little benefit on any.

26. We shall now propose some general rules applicable to the settlement of such disputes; and in framing these we have kept in view the importance of such a mode of settlement as may best facilitate the survey operations, and so prove least expensive to Government. The occurrence of cases of disputed boundaries in the course of the detailed survey of the village has caused more interruption to the work than perhaps all other sources of delay combined, and it would therefore be of the utmost advantage to make the definition of village limits and settlement of disputes, wherever practicable, preliminary to the operations of the regular establishment, which is also the plan followed in the North-Western Provinces.

Rules.

1st.—Before proceeding to the regular survey of a district, a few experienced Surveyors should be deputed to define through the co-operation of the villagers, and aid of the local Revenue Officers, the limits of each village, and secure their preservation by proper land-marks, and the preparation of a descriptive record or map for the use of the regular Surveyor.

2nd.—Before proceeding to define the limits of any village, previous notice should be given to secure the attendance of the parties interested, and in the absence of any dispute, the boundaries should be marked off as pointed out by them.

3rd.—In event of the occurrence of a dispute, where the land is cultivated by both parties, the line of boundary is to be laid down according to actual possession.

4th.—Trivial disputes, not noticed in the village papers, to the extent of a few feet on either side of the possible line of boundary, to be settled summarily on the spot by the Surveyor.

5th.—In any case of a dispute, when the parties consent to abide by the award of one or more arbitrators, an agreement to that effect to be taken from them in writing, and the boundaries laid down accordingly.

6th.—In cases where the Surveyor cannot obtain the consent of the parties to refer the disputes to arbitration, the aid of the Mamlatdar, or other local officer, should be called in, who should use all his influence to effect an amicable settlement; but failing this, and in the event of the dispute being of recent origin and not noticed in the village papers, he should himself inquire into, and decide upon, the line of boundary, which should immediately be marked off by the Surveyor.

7th.—Disputes of old standing, recorded in the village papers, of which the local officer may fail to effect a settlement, should be left over for adjudication by the Survey Officers, who, after a careful consideration of the evidence adduced by the contending parties, should decide upon the line of boundary, and have the marks laid down accordingly.

8th.—The settlement of disputes between Government and alienated villages, which the parties will not consent to submit to arbitration (or where this course may be unadvisable from an apprehension of collusion), should be made by the Survey Officers, as in the preceding rule; but previous to the boundaries being laid down, their awards should be confirmed by the Superintendent, in accordance with the plan already sanctioned by Government for the survey of the Southern Maratha Country, in Mr. Secretary Townsend's letter of 13th December 1844, No. 4475.

9th.—All awards made under the preceding rules should be in writing.

27. The enforcement of these rules, which are similar in principle to those of the survey of the North-Western Provinces, we feel convinced would accomplish the satisfactory settlement of all disputes brought to light in the prosecution of our surveys, and that all trace of them in the course of a few years would disappear.

28. It will be observed that we have confined the formal investigation and settlement of disputes by the Survey Officers to such as have been already recognized in the Government records, and this we feel to be absolutely necessary, as the prosecution of the survey would be quite impracticable were we to extend the same form of procedure to every case, trivial or otherwise, which the villagers may choose to bring forward. The number of such recent disputes will always be found to multiply in proportion to the readiness with which complaints are entertained; and it must be borne in mind that the true boundary in such instances is perfectly well known to the contending parties, whose only reason for not pointing it out is the hope of obtaining some undue advantage by the dispute; while on the other hand, when no encouragement is afforded to the prosecution of such idle claims, the villagers soon come to an understanding amongst themselves, and find the advantage of at once pointing out the true boundaries.

29. The plans for the definition of the limits of villages and fields having been now laid before you, the next question for consideration is the most suitable mode of accomplishing a sufficiently accurate survey of the land, and recording the results of the operation. It seems unnecessary to attempt any detailed description of the various possible methods of field surveying, and we shall therefore confine our attention to that which experience has led us to adopt in the surveys under our control.

30. The measurements of the former Deccan Survey were confined to the ascertainment of the area of the different fields into which the village is divided, and the preparation of a descriptive record of their name, tenures, and boundaries.

31. The present Deccan Surveys were commenced with the same objects, and on the same plan of measurements; but as the work proceeded, the imperfections of any kind of descriptive record of boundaries, especially in the case

before had been the undue importance attached to them, and that no insurmountable or even serious obstacles stood in the way of their adjustment; while the recent law (No. III of 1846) for the construction and preservation of bondary-marks affords ample security against the revival of any disputes once settled by the Survey Department.

24. All the more important of these disputes are of long standing, and in the majority of cases the land has been waste from time immemorial, and rendered of little value to any party by having been converted into a contested grazing ground for the cattle of the several villages claiming any part of it. There is generally no evidence whatever in proof of the original limits, beyond a few vague entries in some of the old village papers, which, even if we could depend upon their authenticity, cannot be relied on as affording a true statement of the extent of the dispute at the time they were written, since it was frequently the interest and practice of the village accountant to enter the dispute as larger than it really was, in order to obtain from Government a corresponding deduction from the rental due from the village.

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31. The present Deccan Surveys were commenced with the same objects, and on the same plan of measurements; but as the work proceeded, the imperfections of any kind of descriptive record of boundaries, especially in the case

of irregularly shaped fields, became apparent and led to the super-addition of a rough sketch map, framed for the purpose of exhibiting the position and shape of the fields, but without aiming at any degree of accuracy with respect to area. This was a great improvement on the original descriptive record, but it was subsequently found that the ordinary plan of measuring, with the cross-staff and chain, was compatible with the accurate protraction of its results upon paper, and that without the aid of theodolites or other instruments for measuring angles, or any new processes of survey, field, and village maps, possessing a degree of correctness sufficient for all practical purposes, could be constructed.

32. The want of an accurate village map had been noticed by the Government of India as a marked defect of the revenue surveys of this Presidency, and the advantages of such a document, whether as regards revenue, or generally administrative purposes, are so unquestionable, that the present plan, by which we are enabled to furnish it, cannot but be regarded as a marked improvement on the former method. It was not at first anticipated that these maps would prove sufficiently correct for topographical purposes; but our expectations upon this head have been more than realized, and the village maps are found to possess a degree of accuracy sufficient to admit of their being united, so as to form a general map of a district or collectorate, without any further aid than is derivable from Major Jopp's maps, on which the positions of the principal places are correctly given: or, failing this, from a triangulation subordinate to that of the grand trigonometrical survey.

33. Thus, while the village map affords the most minute information as to the position, size, and limits of fields, roads, water-courses, etc., comprised within the village limits, the district map may be made to exhibit, with equal accuracy, the relative positions and extent of villages, topographical features of the country, and a variety of other information calculated to be useful to the local revenue and judicial authorities. These maps do not add materially to the cost of the survey, and as their protraction leads inevitably to the detection of any serious errors in the measurements, they afford an important security against inaccuracy, and may be considered to be among the most valuable documents connected with our operations.

34. We are of opinion, then, that the system of measurement should embrace the construction of accurate field, village, and district maps, even where local difficulties may cause the expense of the measure to be much greater than it has hitherto proved. The ordinary measurements by the chain and cross-staff, from which the maps are usually constructed, are inapplicable to the survey of mountainous and difficult tracts of country, where the theodolite would require to be resorted to; but as the two modes of survey may be easily combined, and there is no difficulty in instructing the more expert of the Native Surveyors in the use of the theodolite, we do not consider that any serious obstacles exist to the extension of the plan of operations, we have recommended, to all parts of the country where a revenue survey may be considered desirable.

35. We do not deem it necessary to enter into technical details regarding the construction of these maps, further than to express our opinion that those for the villages should be on a scale large enough to define clearly the limits of fields, so as to admit of the maps being used for ordinary revenue purposes as well as for renewing any boundaries wilfully or accidentally obliterated, and for this purpose we recommend the adoption of a scale of from 20 to 40 guntha chains (of 33 feet each) to the inch, according to the size of the divisions, unless these happen to be unusually minute, when it will be necessary to give a separate map of such portions on a larger scale. For the district map, a scale of two miles to an inch would generally be sufficient to exhibit clearly the limits of villages and the topographical features of the country, without making the entire map inconveniently large. To multiply copies of these maps in the most economical and accurate manner, as well as to guard against any future fraudulent attempt at alteration, we think it highly desirable that they should be lithographed.

36. As regards the accuracy to be considered necessary in the measurement, errors to the extent of five per cent. would not affect the utility of the operation for revenue purposes; but as a much higher degree of accuracy than this can be attained without any sacrifice of labour and time, we think that in a plain country the average error ought not to exceed one per cent., and not more than two per cent. in any district sufficiently level to admit of its being measured by the chain and cross-staff.

37. In the preceding remarks upon the measurements it will have been observed that we have confined ourselves to the results, without entering into a detail of the various processes by which they should be obtained. And we have done so because these results are of an absolute and invariable character, capable of being arrived at with equal certainty by many modes, each of which may have its peculiar advantages under particular local circumstances. It seems therefore unnecessary, and would in many instances be hurtful, to fetter the Superintending Officers with specific rules, which could hardly be so framed as to be suitable in all cases.

38. In treating, however, of the classification of the land, which next demands our attention, we shall adopt a different course, because the results of this operation are of a much less determinate character than those of the measurement, and do not admit of being ascertained with anything approaching to mathematical exactness. The method of procedure becomes greatly more important in the former than the latter case, as upon it will necessarily depend the uniformity and accuracy of the work.

39. The object sought to be attained by our system of classification is the determination of the relative values of the fields into which the land is divided during the process of measurement. The circumstances affecting the values of fields within the limits of the same village, where the climate may be considered uniform, are their natural productive capabilities, their position with respect to the village, as affording facilities or otherwise for agricultural operations, and, in the case of garden and rice lands, the supply of water for irrigation. In estimating the relative values of fields the whole of these might be considered together, and the resulting estimate of their capabilities recorded by the assessor, or the latter might record his estimate of each particular by itself. The former system, by requiring a judgment to be given on a consideration of so many distinct and varying particulars, is evidently dependent for the accuracy of its results on the ability, experience, and integrity of the assessor, and to secure anything approaching to uniformity would require a very high standard of qualifications in the agency employed.

40. Such an agency, however, is unobtainable; for it is not possible to collect men of sufficient ability and experience; and even if it were, we could not depend on their integrity; so that it becomes a matter of necessity to frame a system of operations sufficiently clear and definite to admit of men being trained for the duty, and to enable us to keep up an effective check upon their proceedings. To accomplish this object, we have been led to separate and define, as far as possible, the various elements which combine to make up the value of a field, and, from these to frame such a system of classification as will leave little to the uncontrolled judgment of the classer. With this view we have found it desirable to estimate separately the intrinsic capabilities of the soil, all extrinsic circumstances affecting its value, and the facilities it may possess for irrigation.

41. With respect to the first of these points, in the plan of operations we have to recommend, we have retained the practice of referring every variety of soil to one of nine classes, which experience has proved to afford a sufficiently minute classification for all practical purposes. But in preference to trusting entirely to the judgment of the classer for determining to what class any particular soil should be referred, we have framed a set of rules for the purpose of determining the soils which should fall into each class. The fertility of a soil in this country, or at least in all parts of it to which our operations have yet extended, being chiefly dependent on its power of imbibing and retaining moisture, and as this

quality is mainly affected by depth, we have chosen the latter peculiarity as the principal regulating influence in the formation of our scale of values.

42. There are numerous varieties of soil, known amongst cultivators by peculiar characteristics and distinguishing names; but as many of these differ little, if at all, in fertility, and our classification has reference to the latter consideration alone, it would be out of place to notice in it anything beyond the mere question of value. If all soils of the same depth were of uniform fertility, the depth alone would suffice to determine their class; but this is not the case. There are pure soils, that is to say, of uniform texture, and free from any admixture of deteriorating ingredients, which, although of one uniform depth, yet vary in fertility. Such soils are not numerous, however, and we deem it sufficient for the purpose of valuation to range them all under three orders, which again are distributed among the nine classes of our scale, on a consideration of their depth, as will be readily understood from the following table:—

Class.	Relative value of class in annas or 16ths of a rupee.	Soils of the 1st Order. Of a fine uniform texture, varying in colour from deep black to dark brown.	Soils of the 2nd Order. Of uniform but coarser texture than the preceding, and lighter also in colour, which is generally red.	Soils of the 3rd Order. Of coarse, gravelly or loose friable texture, and colour varying from light brown to grey.
		Depth in cubits.	Depth in cubits.	Depth in cubits.
1	16	$1\frac{3}{4}$	..	..
2	14	$1\frac{1}{2}$	$1\frac{3}{4}$	..
3	12	$1\frac{1}{4}$	$1\frac{1}{2}$	..
4	10	1	$1\frac{1}{4}$	..
5	8	$\frac{3}{4}$	1	..
6	6	$\frac{1}{2}$	$\frac{3}{4}$	1
7	$4\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$
8	3	..	$\frac{1}{4}$	$\frac{1}{2}$
9	2	..	..	$\frac{1}{4}$

43. The first column of this table contains the nine classes of our scale; the second, the relative value of these, estimating the highest at 16 annas, or one rupee, which is the mode of valuation most familiar to natives. We have found by experience that a greater depth than $1\frac{1}{4}$ cubits, or about 3 feet, does not affect to an appreciable extent the fertility of soils, and we have therefore adopted this as the maximum in the case of the 1st and 2nd orders. Soils of the 3rd order are rarely found of a greater depth than one cubit, which we have made the maximum, as any occasional depth beyond this adds nothing to their value.

44. The depths entered in the table determine the classes to which the several orders of soils belong, wherever they are found free from an admixture of particular substances, or unattended by other circumstances which diminish their fertility. These deteriorating influences, when of sufficient importance to require a soil to be entered in a lower class than indicated by its depth, we denominate faults. Those of ordinary occurrence we propose to distinguish by the following conventional marks, as a short and convenient method of recording them in the classer's field-book:—

∴ Denotes a mixture of minute fragments or nodules of limestone.

∨ „ a mixture of sand.

/ „ sloping surface.

× „ want of cohesion amongst the constituent particles of the soil.

∧ „ a peculiar mixture, more or less impervious to water.

≈ Denotes liability to be swept over by running water.
▭ ,, an excess of moisture from surface springs.

45. These comprise all the important faults we have hitherto met with, and one such lowers the soil in which it is found a single class; two lower it two classes; three, three classes, and so on, as will be shown in a subsequent example.

46. Extrinsic circumstances affecting the value of a field, but not its fertility, as distance from drinking water, etc., should be noted by the classer in his field-book.

47. For the purpose of effecting the classification of a field, the classer, with the aid of the village map, enters an outline of its shape in his field book, which he divides by intersecting lines into a number of equal compartments, sufficiently numerous to give a fair average valuation of the soil by an examination of its depth and quality in each compartment. These particulars, and the class into which the soil falls, are noted within each compartment of the classer's sketch of the field, as shown in the following example :—

East.

7 $\frac{3}{4}$ ...	4 ∧ ∧ ≈ $1\frac{3}{4}$.	3 ≈ $1\frac{3}{4}$.	1 $1\frac{3}{4}$.	2 ∴ $1\frac{3}{4}$.
6 1 ...	5 1 ..	4 ∧ $1\frac{1}{2}$ ..	3 ∴ $1\frac{1}{2}$ ..	3 ∨/ $1\frac{3}{4}$.

The figure in the left-hand lower corner of each square indicates the depth of the soil, and the number of dots under it the order of soils to which it belongs: one dot signifying the 1st; two, the 2nd; and three, the 3rd order. The conventional marks in the right upper corner show the faults, each of which degrades the soil one class; from the order of soil, the depth and the faults, is determined the class of relative value to which the compartment belongs, as indicated by the figure in the left-hand upper corner. To take the instance of the lower compartment on the right of the field, the depth is entered at $1\frac{3}{4}$ cubits, and the soil is of the 1st order, as shown by the single dot immediately below. This order and depth indicate the first class of relative value, according to the table; but the presence of two faults (a mixture of sand and a sloping surface), indicated by the signs ∨ /, requires the soil to be entered in the 3rd class, as denoted by the figure 3 in the upper left-hand corner of the compartment. It will also be seen from the example that a particular fault is occasionally entered twice in the same compartment, which means that it exists in so great a degree as to require the value to be lowered two classes in consequence.

48. When the classification of every compartment is completed, the classer enters in his field-book, below the sketch, an abstract, giving the number of compartments or shares of each class, together with their aggregate value in annas, according to the table, and the sum of these annas, divided by the total number of shares, gives of course the average relative value of the field in the annas of our scale. This abstract for the field, given in the above example, would be entered as follows :—

Class.	Number of compartments or shares.	Value of shares in annas of the scale.
1	1	16
2	1	14
3	3	36
4	2	20
5	1	8
6	1	6
7	1	$4\frac{1}{2}$
	10	$104\frac{1}{2}$
		105 average value

The average value of the field in this case is thus shown to be 10 annas and 5 pies of the classification scale.

49. The system we have thus endeavoured to describe possesses the following important advantages: it obliges the classer to give his minute attention to every portion of the field, and by requiring a separate estimate of the value of each, his judgment is brought to bear on a very limited number of particulars, and the chance of error thereby greatly reduced. The distinct record of the valuation of each share further admits of the operation being tested in its minutest details, so that any error of judgment, or carelessness on the part of the classer, in the valuation of any one share in a field subjected to re-examination, may at once be discovered and brought home to him even if it should not affect the accuracy of his average valuation of the whole. The determinate character of the rules of this system, and the facility afforded for the application of a minute and searching test, must greatly conduce to the promotion of uniformity in the work of different classers—a consideration of immense importance where a trustworthy and experienced agency is not to be obtained.

50. The system we have described is confined to the ascertainment of the intrinsic capabilities of the soil, without reference to external influences affecting its productive powers, such as climate or water for irrigation.

51. Climate does not affect in a uniform manner every kind of soil. A change from a dry to a moister climate, for instance, will generally tend to approximate the productive powers of the higher and lower descriptions. The latter will benefit to a greater extent by the additional moisture than the former, the superior productiveness of the better soils in a dry district being in a great measure due to their retaining moisture sufficient to enable them to resist the effects of drought—an advantage which will be of less moment wherever droughts are of rarer occurrence.

52. This alteration in the relative values of the classes might be effected by increasing or diminishing the depth required to place a soil in a particular class; but rather than disturb the uniformity of our system, we prefer to make the requisite adjustment by an alteration in the relative values of the several classes entered in column 2 of our table. By this means we are enabled to make the necessary modification at any subsequent period when we have obtained sufficient information for the purpose; whereas the alteration in the depths of the table would require to be made on commencing the classification of a district, when our knowledge of its peculiarities is comparatively limited. Such alterations, however, are rarely necessary, as the lowness of the assessment should of itself suffice to cover all the more minute variations of value arising from difference of climate.

53. But while climate does not greatly affect the fertility on the several classes of soils, with reference to each other, it constantly and materially influences the productive powers of any one class in different districts, and sometimes in different portions of the same districts. Distinctions of the latter description, however, do not in any way affect the relative classification of the soils, though they form a chief consideration in determining the absolute amount of the rates of assessment for the districts or localities in which they prevail.

54. Irrigation greatly augments the productive powers of the soil, and whenever there is a command of water for this purpose it becomes a very important element in fixing the assessment of the land for which it is available.

55. Irrigated lands may be distinguished by the terms *garden* and *rice*. This distinction is not absolute, as rice is frequently grown in garden land, but rice land, properly so called, is that in which rice is the ordinary, if not the only, irrigated crop grown. Irrigated lands may again be divided into such as are watered from wells, from dams across rivers or streams, from tanks or from wells combined with either of the two latter.

56. In classing gardens irrigated from wells, the chief points to be considered are the following:—

1st.—The value of the soil, as determined by the classification already described.

2nd.—The supply of water in the well.

3rd.—The depth of the well.

4th. The quality of the water, whether sweet or brackish.

5th.—The sufficiency, or otherwise, of extra land under the well, to allow of a rotation of wet and dry cropping.

6th.—The distance of the garden from the village, as affecting the cost of manuring.

57. Of these elements, the supply of water in the well is of most importance, and should be determined by an examination of the well and inquiries of the villagers, in addition to a consideration of the nature of the crops grown, and the extent of land under irrigation. This is the most difficult and uncertain operation connected with the valuation of the garden, especially in the case of wells which have fallen into disuse, and therefore that to which attention should be particularly directed in testing the estimate of the classer, and fixing the assessment of the garden. The remaining elements admit of being determined with accuracy.

58. In deducting the relative values of gardens from a consideration of all these elements, which should be separately recorded by the classer, it would greatly facilitate the operation were the extent of land watered always in proportion to the supply of water in the well. But it is not so, as in many instances the extent capable of being watered is limited by the dimensions of the field in which the well is situated, or the portion of it at a sufficiently low level; and in others, supposing the capacity of the well to be the same, and the land under it abundant, the surface watered will be more or less extensive, as the cultivator finds it advantageous to grow the superior products which require little space, but constant irrigation, or the inferior garden crops, which occupy a more extended surface but require comparatively little water.

59. Wherever the extent of land capable of being watered is not limited by the dimensions of the field, the most convenient method of determining the portion of it to be assessed as garden land is to allot a certain number of acres to the well in proportion to its capacity. By this means the most important element of all is disposed of, and our attention in fixing the rate per acre restricted to a consideration of the remaining elements, which are of a more definite nature.

60. The relative importance of these elements varies so much in different parts of the country that we find ourselves unable, after a careful examination of the subject, to frame a rule for determining the value to be attached to each, and the consequent effect it should have upon the rate of assessment under all circumstances. It must be left to the judgment of the Superintending Officer to determine the weight to be asigned to each circumstance affecting the value of garden land, and, this determined, it will be easy to form tables or rules for deducing from these the relative values of garden land under every variety of circumstance.

61. In the valuation of garden land irrigated from dams or tanks, fewer circumstances require consideration. They are generally limited to the supply of water and the quality of the soil, although it is necessary, in some instances, to allow for distance from village. In this description of cultivation there is seldom a rotation of dry-cropping, and consequently the assessment must be placed on the land actually watered, which prevents the supply of water being estimated by fixing a certain number of acres to each garden, as in the former case, and it becomes therefore necessary to class the supply of water with reference to its abundance and duration. These particulars are ascertained from the number of months of the year in which the water flows, and the nature of the crops produced. The class of water thus determined, and the class of soil as fixed by the system already described, combine to give the relative value of the land irrigated.

62. In cases where the garden land is irrigated, partly from wells and partly from dams and tanks, the important point to ascertain is which is the chief source of supply. This is valued, in the first instance, according to one of the methods just described, and the rates so obtained enhanced in proportion to the value of the aid derived from the minor source of supply.

63. In rice, as in other irrigated lands, the chief points to be considered are the supply of water, the nature of the soil, and facilities for manuring. The supply of water is wholly and always to a great extent dependent on the ordinary rains. In some parts of the country, to guard against the effects of intervals of dry weather occurring in the rainy season, small tanks are formed from which the rice may be irrigated for a limited period. In estimating the supply of water there are two distinct circumstances therefore to be considered, viz., the inherent moisture resulting from the position of the field, and the extraneous aid derived from tanks or from channels cut to divert the water from the upper slopes into the rice grounds below. The weight to be given to each of these elements in the classification of the supply of water depends so much upon local peculiarities, that we feel it impossible to frame a system of universal application; and consequently the determination of this point must be left to the judgment of the Superintending Officer. All that we can do is to indicate the principles according to which, as we conceive, the operation should proceed.

64. The classification of the soil should be effected by a system similar in principle to that already described, though modified in details to meet the peculiarities of different districts. But the circumstances of the rice countries to which our operations have yet extended appear to vary so much that we have not been able to agree upon any detailed rules for the classification that would be suitable to all.

65. The facilities for manuring rice lands will be determined, as in the case of dry-crop soils, by distance from village of the locality from which manure is procurable.

66. We have now defined, with as great a degree of minuteness as we consider desirable, the various operations of the survey undertaken for the purpose of distributing the assessment over the fields into which the lands of each village are divided, with reference to their extent and capabilities. It now remains for us to point out what we deem the best mode of fixing the absolute amount of assessment to be so distributed. The first question for consideration is the extent of territory for which a uniform standard of assessment should be fixed. This will depend upon the influences we admit into consideration with a view to determine the point. Among the most important of these influences may be ranked climate, position with respect to markets, agricultural skill, and the actual condition of the cultivators. The first of these may be considered permanent; the second and third less so; and the fourth, in a great measure, temporary. And as our settlements are intended to be of considerable duration, there is an obvious advantage in regulating the assessment by considerations of a permanent character, or at least such as are not likely to undergo any very material change during the term of years (generally 30) for which it is to endure.

67. In determining, then, upon the extent of country to be assessed at uniform rates, we are of opinion that the more permanent distinctions of climate, markets, and husbandry should receive our chief attention. We should not think of imposing different rates of assessment on a tract of country similarly situated in respect to these three points, in consequence of the actual condition of the cultivators varying in different parts of it. Were we to do so, we should depart from the principle laid down by the Honourable Court of Directors, of assessing land according to its capabilities, and adopt the objectionable one of doing so with reference to the means of the person holding it. The effect of such a system, by creating different rates of profit upon capital employed in agriculture, would interfere with its natural and most advantageous distribution, by diverting it from lands actually in cultivation to the lowly-assessed waste of those villages of which the cultivators happen to be poor. By enabling the latter to meet the Government demands without the application of the same degree of capital and skill required in the case of better cultivated villages, it would foster in the former a slovenly and unremunerative mode of husbandry. By taking into account an element so uncertain and liable to change, as the condition of the cultivators, in particular villages, the assessment would become less and less suitable with every improvement in their condition. On the other hand, by basing the assessment on considerations of a durable character, we have

the promise of its remaining suitable for a lengthened period, and, at the expiration of the term for which it is confirmed, requiring no further alteration than a simple increase or decrease of its amount, as the exigencies of the country and Government might demand.

68. Each collectorate being divided into districts, of which the management and records are distinct, it is an obvious advantage to consider the assessment of each of these divisions separately. And were the points bearing on the distribution of the Government demand alike in all parts of any such division, one standard of assessment would be suitable for the whole. But this is seldom the case; and there is usually such marked distinctions between different portions of the same district as to require the assessment to be regulated with reference to these. The first question, then, in proceeding to the assessment of a district is to ascertain whether such distinctions exist, and to define the limits over which they prevail. This, however, will seldom be a task of much difficulty, or involving any very minute investigations, as marked differences only, calling for an alteration in the rates of assessments, require notice; and within the limits of a single district three to four classes of villages would generally be found ample for this purpose.

69. The relative values of the fields of each village having been determined from the classification of soils, the command of water for irrigation, or other extrinsic circumstances, and the villages of a district arranged into groups, according to their respective advantages of climate, markets, etc., it only remains, in order to complete the settlement, to fix the absolute amount of assessment to be levied from the whole.

70. The determination of this point is perhaps the most important and difficult operation connected with the survey, and requires, beyond all others, the exercise of great judgment and discrimination on the part of the officer on whom it devolves. The first requisite is to obtain a clear understanding of the nature and effects of our past management of the district, which will be best arrived at by an examination and comparison of the annual revenue settlements of as many previous years as trustworthy data may be procurable for, and from local inquiries of the people, during the progress of the survey. The information collected on the subject of past revenue settlements should be so arranged as to enable us to trace with facility the mutual influence upon each other of the assessment, the collections, and the cultivation.

71. This, in our opinion, can best be done by the aid of diagrams, constructed so as to exhibit, in contiguous columns, by linear proportions, the amount and fluctuations of the assessment, collections, and cultivation for each of the years to which they relate, so as to convey to the mind clear and definite conceptions of the subject, such as it is scarcely possible to obtain from figured statements, even after the most laborious and attentive study. The information to be embodied in the diagram best suited for our purpose should be restricted to the land of the district subject to the full assessment; the extent of this cultivated in each year; the assessment on the same; and the portion of the assessment actually realized. This will exclude from the diagram several items of revenue obtained from this land, such as the rent of grazing farms, fruit-trees, sheep tax, etc., independent of the assessment hitherto levied on the cultivated land, which is the proper object of our present inquiry.

72. The hucks of hereditary officers upon cultivated land, however, having to be included in the survey assessment, and as forming a real addition in the burdens on the land, might appropriately be included in the diagram; but as no authentic records of the amount of such hucks actually realized are obtainable, we think it preferable to omit them, and to estimate separately the addition to be made on their account to the collections shown by the diagram.

73. The items of information admitted into the diagram should be alike for each year. They should have reference to the same villages; and in the event of any having lapsed to Government, or having been otherwise transferred during the period embraced in the diagram, for which information for all the years required cannot be obtained, such villages should be excluded altogether; or if it

be considered preferable to include them, a proportionate increase should be made to the entries of the diagram in the case of the years for which exact data may be wanting. The cultivation and assessment for each year should be estimated in the same land measures and the same currency, and an explanation of the value of these afforded.* Every care should be taken to secure the accuracy of the information embodied in the diagram, and the points in which it may be considered imperfect brought to notice.

74. Furthermore, to assist in tracing the causes to which the prosperity or decline of villages, or tracts, containing several villages, are to be attributed, independent statements of the annual revenue settlements of each village should be prepared: and from these again a general statement for the whole district, or any portion of it, should be framed, and its accuracy tested by a comparison with the general accounts of the taluka, and from the returns so prepared and corrected the diagram should be finally constructed. The nature and amount of the various items of land revenue and hucks excluded from the diagram should be separately noted, and taken into account in considering the financial results of the proposed assessment.

75. And finally, with the view of affording the fullest information on this important subject, detailed figured statements should be furnished, exhibiting the source and amount of every item of revenue hitherto derived from land of every description, whether Government or alienated, comprised within the limits of the villages for which an assessment is proposed.

76. The information thus collected and exhibited, with that obtained by local inquiries into the past history of the district, will generally enable us to trace the causes which have affected its past condition; and a knowledge of these, aided by a comparison of the capabilities of the district with those of others in its neighbourhood, will lead to a satisfactory conclusion regarding the amount of assessment to be imposed.

77. But instead of a particular sum at which a district should be assessed, it amounts to the same thing, and is more convenient to determine the rates to be imposed on the several descriptions of soil and culture contained within its limits, so as to produce the amount in question. And to do this it is only requisite to fix the maximum rates for the different descriptions of cultivation, when of course all the inferior rates will be at once deducible from the relative values of our classification scales.

78. The rates so determined should be applied to all descriptions of land alienated as well as otherwise; for the settlement could not be considered complete unless the extent and value of alienated land, as well as that under the immediate management of Government, were ascertained and recorded. When the calculation of the assessment from these rates is completed, field registers, embodying the results of the survey, should be prepared for each village separately for the use of the Collectors. These, and the village maps, form a complete record of our operations; and while they and the field boundaries exist, all the important data resulting from the survey will be preserved.

79. It will have been observed that in the description just given of the system of operations we have to recommend, we have confined ourselves in a great measure to the statement of principles and results, without entering into details upon points which are not of general application. To have attempted greater minuteness would, without answering any useful purpose, have fettered the operations of the survey by enjoining particular methods of procedure, which local circumstances might render inapplicable. And for this reason we consider it necessary to allow, with reference to these points, a considerable latitude to the judgment of the Superintending Officer, so as to enable him to accommodate the details of his operations to the varying circumstances of the localities to which they may extend.

* Collections or remissions on account of outstanding balances should be included in the entries of years to which they relate, though made at a future period.

80. There are nevertheless certain points connected with the interior management of the Survey Departments which appear to us of uniform application, and sufficiently important to be defined in the shape of general rules, or principles for future observance. They are as follows:—

1st.—That every operation of the survey, such as the defining of boundaries, the modes of measuring and mapping, the classification of the soil, etc., should be performed in accordance with definite rules which should provide, as far as possible, for every difficulty likely to be met with in practice. The Assistant Superintendents, and every member of their establishments, should be furnished with these rules, or such portions of them as refer to their particular duties, for their instruction and guidance.

2nd.—Precautions deemed requisite for the prevention of fraud, such as particular methods of recording the survey data, injunctions regarding punctual payments for all supplies, prohibitions against residence in private dwellings, borrowing money from, or incurring obligations to, any of the inhabitants of villages under survey, etc., should also be embodied in these rules; and the Survey Officers should be careful to see that they are uniformly acted up to, and not allowed to fall into disuse.

3rd.—No alterations of, or deviations from, these rules should be made by any Assistant, without the sanction of the Superintendent; and in order to ensure uniformity, any modification, if generally applicable, should be extended to the establishments of all the Assistants.

4th.—Copies of these rules, and all important modifications of them, should be furnished by each Superintendent to the other Superintendents of Survey, in order that each may be kept aware of the methods practised on the other surveys, and thus enabled to take advantage of every improvement applicable to his own operations.

5th.—The pay of the members of the native establishments should be regulated, as far as practicable, with reference to the quantity and accuracy of the work executed by each, and the principles observed in the regulations of pay should be the same in the establishments of all the Assistants.

6th.—Daily, or at least very frequent, reports of the nature and quantity of work performed by the members of the native establishment employed in the field should be transmitted by them to the Assistant Superintendent, that he may be kept exactly informed as to what every person under him is doing and be able to adopt timely measures for preventing obstruction to his operations. When the establishments are not employed in the field, a record of the daily work of each member should be kept for the information of the Assistant Superintendent.

7th.—A regular and frequently recurring test of the work of the native establishments should be kept up by the Assistants in charge, and monthly returns, showing the work of each individual employed in the field, as also the extent and result of the test with reference to each particular, should be furnished by the Assistants for the information of the Superintendent.

8th.—All letters to the address of any Assistant Superintendent should be opened and replied to by himself; and in event of his absence, no karkun should be permitted to open, read, or reply to such communications.

9th.—The measurement should always be considerably in advance of the classification, and, when practicable, we think it advantageous that these operations be prosecuted under the superintendence of separate Assistants.

10th.—An annual Progress Report should be submitted by the Superintendent of each survey for his department. It should exhibit the quantity of work executed in each branch, the portion of this subjected to test, and the degree of accuracy attained, as well as the cost of the whole; and the same particulars should be given for the work executed under each Assistant. The report should likewise afford any explanations necessary to enable Government to come to a correct conclusion regarding the operations of the year.

M H 1700—5

11th.—The proposals for the assessment of each district should be made by the Superintendent, as the Assistants, from their more limited experience, and the circumstance of their duties confining them to particular districts, have not the same opportunities of acquiring all the information necessary for the purpose, and the discussion of their proposals by the Superintendent would occasion a needless prolixity in the correspondence connected with the determination of the rates of assessment. The Superintendent, however, will find it advantageous to consult with his Assistants regarding the state and peculiarities of the districts where they may be employed, as their opinions will often be of much service to him in forming his own conclusions with respect to the rates.

12th.—All the accounts of the department with the Collector and Civil Auditor should pass through the office of the Superintendent. The latter should have an Account Current with the Collector who should make advances on his requisitions to any extent necessary. The survey accounts should be made up for each month and submitted for audit by the Superintendent, and the Civil Auditor should return them to him when passed. They should then be transferred to the Collector, who then would give the Superintendent a corresponding credit in his Account Current.

The Superintendent should have a similar Account Current with each of his Assistants, making them advances, from time to time, for their own pay and that of their establishments, and giving them credit for signed receipts and similar vouchers forwarded with their accounts, which should be furnished monthly.

13th.—At least two or three seasons before the probable termination of the survey of a collectorate, or other division of the country, the Superintendent should request the instructions of Government regarding the future destination of his department; that in event of Government contemplating its transfer to another quarter, he may have time to make the necessary arrangements for moving the establishments gradually into the new field, and thus avoid the risk likely to attend the sudden transfer of so large an agency into a country of which they have no experience, and where the system previously pursued may prove inapplicable.

81. In addition to the points noticed in these general rules there are many technical details in regard to which uniformity is desirable, but we consider it would be difficult, if not impossible, for any but those who have a practical knowledge of the working of a survey to form a correct judgment with respect to them. Furthermore, as these details are not of a permanent nature and would require modifications to meet local peculiarities, we do not consider that any good purpose would be served by attempting to define them. Greater uniformity than we have endeavoured to enjoin could not, we conceive, be effectually secured, except by placing the several Survey Departments under one controlling authority, fully conversant with the principles and details of a revenue survey.

82. Having now completed the first division of our subject, we turn our consideration to "the most suitable means for ensuring the results of the surveys being turned to the best accounts, and maintained in their original integrity in the future management of the districts."

83. The introduction of the survey settlement should, in our opinion, be effected by the Superintendent, in conjunction with the Assistant Collector of the district, in order that the latter may become fully acquainted with the system, and the former have an opportunity of observing the practical working of its details and of explaining them fully to the Revenue Officers in charge of the district, as well as of overcoming any difficulties, and meeting objections which may present themselves in the course of the settlement.*

84. The future administration of the survey settlements is a subject of the utmost importance, as a successful result cannot be anticipated unless the details

* If the Collector himself holds direct charge of the district, he will of course be present at the introduction of the survey settlement, as will he also be if the Assistant Collector in charge is not sufficiently experienced to form a correct opinion as to the merits of what is being done; or if, for any other reasons, he thinks proper to watch proceedings. The Assistant himself, though ever so inexperienced, should also be present, for he cannot be in a better school in which to learn the most important parts of his revenue duties.—*G. L. No. 6900, paragraph 11.*

of revenue management be carried out in strict accordance with the principles on which the settlements are based. This subject embraces so wide a field, and involves the consideration of so many details, that to attempt to establish the suitability of every proposition we have to make in regard to it would lead to almost interminable and, in our opinion, uncalled-for discussion, on which account we prefer to submit our views in the form of definite rules for the guidance of the local Revenue Officers. These rules comprise all the points which occur to us as of sufficient importance to call for notice; but in submitting them for approval we wish it to be understood that they should be considered applicable only to the collectorates above the ghats, already surveyed or in course of being so. In other divisions of the Presidency, where the husbandry and revenue system are different, great alterations might be necessary.

RULES.*

1st.—With a view to the improvement of the country and people the assessment now introduced by the Superintendent, Revenue Survey, , has been fixed by Government for a period of thirty years, viz., from Fasli to , during which period the full benefit of every improvement, such as the conversion of dry into irrigated land by the digging or repairing of wells and tanks, the planting of fruit-trees, etc., will be secured to the incumbent of the land, and no extra assessment levied on that account.† G.L: N of para

2nd.—All cesses upon land have been absorbed in the new assessment; consequently when there are fruit-trees in a field, their produce is to be taken by the cultivator, and nothing beyond the assessment placed on the field levied on that account from him; but in the case of valuable fruit and other trees standing in fields assessed at dry-crop rates, and *not in cultivation at the introduction of the survey, and the produce of which it has hitherto been customary to sell on account of Government, the right of property in these trees and of occupancy in the field should be* offered at a fair upset price, and *sold once for all by public auction to the highest bidder, and nothing in excess of the survey assessment thereafter exacted. But if no one offer to undertake the cultivation of the field on these terms, the produce of the trees may be sold annually according to custom.*‡ G. L., 28th Fuar No.

3rd.—No field is to be let for less than the full survey assessment, on account of its having been long waste, overrun with jungle, or any other reason whatever. G.L. N of para

4th.—In the Survey Registers, in the case of fields containing garden and rice land, the said land is entered at so many acres bearing a certain assessment, or the latter is laid upon the well in the case of garden land, without the irrigated acres being sepcified. This assessment is invariably to be levied and nothing G.L. N of para

* *The rules here given have been altered, in some instances, from those of the original manuscript report, in compliance with instructions contained in the Government letters to the Revenue Commissioner, Southern Division, No. 5593, dated 22nd September 1848, and No. 6900, dated 16th November 1849; but the numbers of the rules remain unchanged. The paragraphs of these letters, sanctioning the rules as they now stand, are quoted in the margin opposite each rule, and remarks by Government which qualify the application of any of the rules, are given in foot-notes to the rules to which they refer. Where alterations have been made, the original reading is given in small type in the margin: words altogether omitted from the original manuscript are given in* Roman *in the margin, and words added to the original manuscript are printed in* Roman *in the body of the rules.*

† *A proclamation to the effect of Rule 1 should be published when the revised rates are introduced in the district, and every Patel should be furnished with a copy.—G. L. No. 5593 of 1848, paragraph 25.*

Any holder of a Government field wishing to appropriate a portion of the arable land contained in it for some purpose unconnected with agriculture, as in order to build a temple, or a dharmashala for the use of travellers, or a tank to provide water for public purposes, and not for irrigation, and desirous of obtaining a remission of the assessment on the land to be so appropriated, must obtain the consent of the Collector before proceeding with the work; otherwise he will have no claim to any remission of the assessment, and any petition he may afterwards make on the subject will be disallowed. This rule, however, is not to be interpreted as in any way restricting the right of the occupant to dig wells, construct tanks for irrigation, erect farm buildings, or in any other way to expend money on his field for agricultural purposes without reference to the Collector, secured to him by the 1st of the Survey Rules.—G. R. No. 3053 of 27th May 1853.

‡ *An occupant may sub-let or dispose in any way he pleases of trees bought under this rule.*

An occupant's right, or a right derived from him over trees bought under this rule, holds good only so long as he retains the occupancy of the revenue survey number in question. Should he resign the number, or transfer the occupancy to another person, the right over the trees lapses, or is transferred to the new occupant.

In case an entire revenue survey number containing trees should be resigned, or lapse to Government on failure of heirs, the occupancy should be sold on account of Government at a fair upset price with the trees. The disposal of occupancies comprising parts of revenue survey numbers is provided for by Rules 7 and 8.

more, whether a greater or less number of acres, or none at all be cultivated with garden or rice crops; and should there now or hereafter be garden or rice land in any field not entered as having such in the Survey Registers no extra assessment is to be levied on that account; the dry-crop assessment therein entered is alone to be levied. In the Registers also a deduction is made on account of barren[a] *land in certain fields, and the assessment placed on the arable land alone;* [a]Unarable. *but in event of the cultivator bringing any portion of the land deducted as barren*[b] *into cultivation no extra assessment is to be levied on that account; the assessment on the field entered in the register is alone to be levied.**

[b]Unarable.

G.L. No. 6900 of 1849, paras. 3 and 4. *5th.—Every cultivator in whose name any field, or share of a field, on whatever tenure held, is entered in the village cultivation returns is to be considered the holder of such field or share; and so long as he shall continue to pay the survey assessment due on it, he cannot be ejected or deprived of his right by any revenue authority; but in the event of his failing to discharge the full assessment, Government reserves the power of ejecting him from any field or share of which the assessment shall at least be equal to the balance outstanding, the defaulter retaining, however, the privilege of determining the particular field or fields to be so relinquished;* and in case when the tenure precludes summary ejectment, the Collector will observe the forms necessary to give his orders the force of a legal decree.†

G.L. No. 5593 of 1848, para. 29. *6th.—In the event of a holder of Government land dying, his fields or shares are to be entered in the name of his eldest son or next heir, should he or his representatives agree to take them.*

G.L. No. 6900 of 1849, para. 7. *7th.—When two ryots hold a field, and one of them relinquishes his share, or dies without heirs, the share thus elapsing is to be offered, in the first instance, to the other sharer before it is offered to any other party; and in event of the said sharer declining it, and no other party applying to take it up, the former must relinquish his share too, and allow the whole field to become waste.*

G.L. No. 6900 of 1849, para. 7. *8th.—When there are more sharers than two in a field, and any of them relinquishes a share or dies without heirs, it should be offered, as above, to the sharers, in the first instance, beginning, in event of their failing to settle the matter amongst themselves, with the largest sharer, and so on to the least. If none of these, nor any other party, be found to take up the relinquished share, the whole field must be thrown up.*‡

G.L. No. 5593 of 1848, para. 31. *9th.—Whoever has a field, or portion of one, entered in his name in the Government accounts may have the said field or portion transferred to the*

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* *This does not apply to a tank included in a revenue survey number, and deducted as unarable, watering other lands besides those included in that number. The occupant is not permitted to cultivate the area of the tank so deducted after the water has dried up.*

† *Your 10th paragraph (Revenue Commissoner's letter dated 10th September 1847, No. 2258) inculcates a prudent caution in respecting the insertion of the names of parties as the holders of fields. Care should be taken that the real holder is well ascertained; and if there be a dispute, no entry should be made in the Survey Books that can give one party a right which he might not on inquiry be found to possess. It is a great object to establish our Survey Books as a complete record of the state of the occupancy at the time of the operation.—G. L. No. 5593 of 1848, paragraph 28.*

In the Superintendent's remarks in paragraph 20, on the subject of Rule 5th, I quite concur, for he admits the only exceptions for which I wished to contend in my letter of 10th September 1847, viz., cases which "have been fraudulently, or through mistake, omitted to be entered." That such cases must be guarded against Government have decided in paragraph 28 of the letter under reply, and important as I admit the rule to be, justice I think requires that the exception should be borne in mind.—Revenue Commissioner's letter No. 3195 of 1849, paragraph 6.

In the remarks made by you in paragraph 6, regarding the other provisions of this rule, Government concur.—G. L. No. 6900 of 1849, paragraph 4.

Rule 6 is approved, provided no Mirasdari, or recognised heritable right, is interfered with.—G. L. No. 5593 of 1848, paragraph 29.

Rules 7 and 8 should, in the opinion of Government, be relaxed only in cases in which any of the co-sharers in the field have held possession of their land for upwards of 20 years, and then never but in cases in which the Collector himself or an experienced Assistant may consider the relaxation absolutely necessary to prevent considerable hardship being entailed on individuals.—G. L. No. 6900 of 1849, paragraph 7.

‡ *Resignations of parts of Judi Inam Revenue Survey numbers are not permissible. This rule does not, however, extend to transfers of such shares as may be made in accordance with Rule 9.*

When a Judi Inam Revenue Survey number is held in shares and one of the sharers dies without heirs, or otherwise vacates his share, in the event of the remaining sharers failing to settle the matter among themselves, the payment of the Judi due on the lapsed share should be required from each sharer in succession, beginning with the holder of the largest share. If none of them consent to pay the Judi on the lapsed share, the Judi tenure of the whole Revenue Survey number will be considered as resigned and the number will be entered as Khalsat.—G. L. No. 609 of 27th February 1856.

*name of any other person agreeing to cultivate the same on his making a written application to that effect in the usual "Razinama," or petition to resign.**

10th.—Proprietors of Inam, Judi and Miras lands, having possession of the same, have the right of cutting down or otherwise disposing of all trees growing therein, and also holders of Government fields, of which they have been in uninterrupted occupancy from a period anterior to the age of the trees, or for a period of twenty years, or who have purchased the trees under the provisions of Rule 2. G.L. No. 5593 of 1848, para. 32, and G. L. No. 390 of 12th February 1847.

11th.—Holders of Government fields besides those specified in preceding rule, or occupants of Miras, Judi or Inam lands, holding the same from Government,[a] must obtain permission to cut down trees, and will, in event of permission being given, be required to plant two trees for every one cut, unless exempted from this condition by order of the Collector. The permission to cut trees under this rule and also trees in Government waste fields, for any purpose connected with agricultural operations, to be granted by the Patel and Kulkarni on application, a record thereof being kept for the inspection of the Government officers. For other actual and immediate wants of the villagers, such as repair of houses, etc., permission to be obtained from the Mamlatdar or Mahalkari; but for cutting any large number, or for any purpose of sale or profit, the permission of the Collector or one of his Assistants to be necessary, when any conditions which may appear advisable can be imposed.† G.L. No. 390 of 1847, and G. L. No. 6900 of 1849, para. 12.

[a] Have permission to cut down Babul, Date, and all young timber trees, with the exception of those growing on the boundaries, which are to be preserved as land marks, and fruit or large timber trees, none of which are to be cut down without permission from the district revenue authorities unless the property of the holder, by purchase, under the provisions of Rule 2.

Supplemental rule to those following paragraph 84 of the Joint Report by the Superintendents of Survey, dated 2nd August 1847.

The specifications regarding trees contained in the 2nd, 10th and 11th of the Survey Rules are not to be considered applicable to villages and parts of villages especially selected by the Conservator of Forests, and approved by Government, for the growth and preservation of teak and other trees on behalf of Government: in such villages and parts of villages property in trees, and also the arrangements made for their preservation, shall remain unaffected by the introduction of the Survey Settlement.

12th.—In taking up waste for cultivation, a ryot must agree for a whole survey field at the full assessment and no portion of a field is, on any account, to be given for this purpose, except in the case mentioned in the next rule; and when two or more cultivators agree together to cultivate a waste field, it must be entered in the name of one of their number who will be considered the holder, unless the assessment of the field amount to, or exceed, twenty rupees, in which case it may be entered in the names of two or more holders, on the condition that the assessment of the share of each shall in no case fall short of ten rupees.‡ G.L. No. 5593 of 1848, paras. 34 and 36, and G. L. No. 6900 of 1849, para. 8.

13th.—There are some survey fields, consisting in great part of land[a] covered with dense jungle, or otherwise unsuited in their present state for cultivation, upon which no assessment is placed in the Survey Registers. In the event of portions of such fields being brought under cultivation, rates of assessment should be fixed by the Mamlatdar upon the acres under tillage, equivalent to those of similar soils in the same village. This rule applies to all fields in the Survey Registers on which rates of assessments have not been fixed.§ G.L. No. 6900 of 1849, para. 6.

[a] Unarable.

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* *The transfer includes the right over trees, houses, and everything immoveable in the occupancy transferred.*

† *The purchaser of the toddy farm has no right whatever over date trees in occupied land; his farm is confined to the date trees standing in unoccupied land.*

‡ *This rule only applies to unoccupied waste land on being first taken up, not to occupied land, even though bearing assessment over twenty rupees, or to land which has been resigned since the settlement.*

§ *Reference to be made to the Survey Department, so long as it is in existence in a district, for fixing the assessment of land required for cultivation, and unassessed in the first instance.—G. R. No. 1069 of 2nd April 1856.*

G.L. No. 5593 of 1848, para. 39.

*14th.—Unless special exceptions be made, by the Collector, of valuable grass lands, certain to realise rents in excess of the survey assessments, the grazing of all waste Government and Miras land is annually to be sold by auction, field by field, at the commencement of the monsoon, a preference being given at the sale to the inhabitants of the village to which the land may belong. The bidding however, for any waste field should not be allowed to go beyond its assessment in the Survey Register, and when it reaches this point, the field should be entered, in the name of the last bidder, as other cultivated land held at the full assessment, and the persons so taking it, admitted to all the privileges of a holder of land under tillage.**

G.L. No. 5593 of 1848, para. 39.

15th.—The grass of fields, especially excepted by the Collector from the operation of the preceding rule, may be sold by auction to anyone for sums in excess of the survey assessment.

G.L. No. 6900 of 1849, para. 13.

16th.—[a] The grazing of the unarable and other fields not subjected to assessment in the Survey Registers should be sold by auction by the Collector, as in the preceding rule, a reasonable proportion being set aside for the free pasturage of such villages as have hitherto enjoyed this right.†

[a] Of unarable land and other fields not subjected to assessment in the Survey Register a reasonable proportion, with reference to the size of the village, should be set aside by the Collector for the free pasturage of the village cattle, and the grazing of the remainder sold by auction, as in the last rule.

G.L. No. 5593 of 1848, para. 42.

17th.—In some villages, houses are attached to particular fields, and it has been customary to oblige a ryot, throwing up one of these fields, to relinquish his house at the same time. This custom, however, is now abolished; and every cultivator is at liberty to throw up any field without his title to his house being at all affected thereby. This rule does not apply to the case of alienated lands.

G.L. No. 5593 of 1848, para. 42.

18th.—In the Survey Registers an assessment is placed on Judi and Inam, as well as Government fields, but the Judidars and Inamdars are not bound thereby, and are at liberty to let out their lands on any terms they please.

G.L. No. 5593 of 1848, para. 42.

19th.—In event of Inam land being confiscated, or temporarily attached, it is to be let out, while under Government management, at the survey assessment, or sold by auction, if waste, exactly as Government land. This rule does not apply to the year in which the attachment is effected for which the existing agreements made with the Inamdar should be allowed to stand.‡

20th.—Cultivators wishing to relinquish fields must give in a written application to that effect (which must specify the number of acres, and assessment of every field to be relinquished) to the Village Officer on or before the 30th April in each year. The latter must, without delay, forward the application, together with the parties concerned, to the Mamlatdar or Mahalkari, who, after satisfying himself on the subject of it, is to ratify the application, and transmit an order to that effect to the Village Officers, when the latter will make the necessary entries in the village accounts. In the same way, when waste fields are wanted for cultivation, a written application is to be made to the Village Officers, who are to forward it, with the applicants, to the Mamlatdar or Mahalkari, who, after satisfying himself that there is no objection to giving the land applied for, is to accept their agreements, and transmit an order to that effect to the Village Officers. But the latter are not, under pain

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* *In the vicinity of the ghats, and in some other districts, the quantity of land available for grazing is much more than can be required by the villagers; in these cases the officer in charge of the district will set apart a portion of grazing land in each village sufficient for the reasonable requirements of the villagers.*

This reserved portion will be bid for exclusively among the villagers, and the remainder will be open to the bid of anyone.

† *The time of selling the grass privileges is left to the discretion of the Collector, who must take care to provide against loss from unreasonable sales of the farm.—Paragraph 6 of G. R. No. 11093 of 26th November 1851.*

Land assigned at the settlement as free common, or for any public purpose, is not to be resumed or devoted to any other purpose, without the sanction of the Revenue Commissioner.—Paragraph of G. R. No. 1036 of 17th February 1853.

‡ *When an Inam village already surveyed lapses to Government, the survey rates may be at once introduced, remissions being allowed for the first season, in the usual way, in all cases where the survey settlement exceeds the amount of individual payments under the Inamdar's rates.*

When the settlement is introduced into lapsed or alienated villages situated in a district already settled, the guarantee will be restricted to the unexpired period of the general lease of the district. This rule is not, however, applicable to isolated villages where a 30 years' guarantee was specially given at the time of settlement.

*of punishment, to accept either resignations of field or engagements for waste, or to make alterations in the cultivation registers without referring, as above required, in the first instance to the District Officer, and receiving his orders thereupon. All accepted resignations of cultivated and accepted applications for waste lands, are to be produced at each Jamabandi Settlement for examination and will form the vouchers for every alteration in the cultivation Registers.**

[G.L. No. 6900 of 1849, para. 10.]

21st.—The revenue should be collected by fixed instalments, without reference to the proportion of early or late crops grown in any one year: and consequently no field inspection for the purpose of obtaining such information should be made. In villages where early crops prevail, we recommend the collections to be made in four equal instalments, falling due on 15th December, 1st February, 15th March and 1st May; and where the early and late crops are nearly equal, or the latter predominate, we also recommend four equal instalments, but respectively falling due a month later, viz., on the 15th January, 1st March, 15th April and 1st June.†

[G.L. No. 5593 of 1848, para. 46.]

[Rules (15 and 16) passed by Government on the 20th August 1852.]

22nd.—The field boundary marks erected at the survey should be preserved with the greatest care, and when injured, timely repairs must be made by the cultivators in the case of cultivated lands, and by hired labourers in the case of waste. The expense of the latter may be defrayed by the Collector, without reference, if the sum do not exceed Rs. 5 for every 1,000 acres of waste, and, after reference to the Revenue Commissioner, up to Rs. 10 for every 1,000 acres. The intervening strips connecting the boundary marks of a breadth corresponding with the latter are constituted the boundary of the field, and forbidden to be ploughed over or otherwise injured; and in the case of dry-crop land before preparing any field for sowing, these strips are to be distinctly marked off each year by the holder running his plough along the boundary. In event of this order being neglected, and this space ploughed up or sown, the cultivator is to be made to connect the two contiguous marks, between which the boundary had been disregarded, by a continuous ridge of earth, 1½ foot in height, and should he fail to do so within a certain number of days, the Village Officers are to eport the rcircumstance to the Mamlatdar, who is to apply to the Collector for a notice to be served on the holder of the field, according to the provisions of Act III of 1846: and if this be disregarded, the boundary is to be put up by hired labourers, and the amount recovered from him, as therein provided.

[G.L. No. 5593 of 1848, para. 46.]

23rd.—Independent of the precautions specified in the preceding rule, a regular inspection of fields for the purpose of ascertaining the state of the boundary marks, and that none of the fields entered in the accounts as waste are surreptitiously cultivated, is to be made in each village, as soon as practicable, after the first of November in each year. The results of this inspection are to be entered in a Field Register, prepared according to the form hereunto annexed. Before, however, commencing the work of inspection, the Karkun nominated for the duty should summon the villagers to the chowri, when he should read out and explain to them the Government Proclamation regarding the preservation of their boundary marks, of which a copy is subjoined. He should make the inspection in company with the Village Officers, and take care that the owners and occupants of the fields visited be also present. He should point out to them any repairs required to their boundary marks, and order that they be completed within a certain number of days. In event of any of the strips of boundary between the

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* *The purchaser of the grazing of a revenue survey number has a prior claim to the occupation of that number for the ensuing year up to the 1st January; after that date the Kabulayat of any other applicant is to be taken for the ensuing year, without reference to purchaser of the grazing.*

† *"Government is in favour of Rule 21 standing as originally proposed, but will not object to the Collectors being informed, with reference to this rule, that if they consider necessary any alteration in the 'Kists' therein laid down, they are forthwith to state in detail their reasons for so thinking in a letter to you (Revenue Commissioner), which you will be pleased to forward to Government. The Collectors may be informed in a foot-note to English version."—G. L. No. 6900 of 1849, paragraph 10.*

The particular villages in each taluka to be considered Kharif or Rabi villages are to be settled by the Collectors, in communication with the Revenue Commissioner, and no charge is afterwards to be made in this settlement without sanction previously obtained from him, and the circumstances being noticed in the Annual Revenue Reports.—G. L. No. 4866, dated the 17th July 1852.

The dates fixed in the Joint Report are those on which the realisations should commence; the revenue should be realised on that day, or as soon after as possible.—G. R. No. 11093 of 26th November 1851.

marks having been ploughed over or otherwise encroached upon, the Inspector should require the party who may have done so to connect the two adjoining marks, between which the boundary has been violated, by a continuous mound of earth, one cubit in height, as a punishment for the encroachment, and make a note to that effect in a separate memorandum, to be kept in addition to the Register, for the purpose of recording any remarks not admissible there. When every field has been thus inspected, and the state of its boundary marks entered in the Register, a second examination, after the lapse of a sufficient time to allow of the repairs to the marks being completed, should be made of every field entered at the first inspection as requiring repairs. And should any of these still remain to be made, the party to whose neglect this may be attributed should be required, in addition to repairing the marks, as originally directed, to connect each incomplete mark with the one adjoining it, by a continuous ridge of earth, one cubit in height; and these particulars, with the name of the individual, should be noted in the separate memorandum above alluded to. A notice to this effect should then be served on him in compliance with the provisions of Act III of 1846, and in event of his failing to complete the boundary marks within the specified period, the Village Officers are to do so by means of hired labourers, and the expense incurred on this account to be recovered from him, as provided in the said Act. The correctness of the entries regarding boundary marks in the Inspection Register should be tested in every village by the Mamlatdar, Mahalkari, or some confidential member of their establishments, and the results of this re-examination entered in the column of the Inspection Register appropriated for the purpose.

FORM OF PROCLAMATION.

The Honourable the Governor of Bombay in Council hereby gives notice to all proprietors, holders, and occupants of land in the surveyed districts of this Presidency, that they are to preserve with the utmost care, and repair from time to time, as may be necessary, the boundary marks, which define the limits of their several fields, as fixed at the survey; and with a view to securing this, they are hereby directed, before preparing any dry-crop field for sowing, to cause a plough to be run round the boundary, leaving an untouched strip of three cubits in breadth to connect each boundary mark, which strip is to be carefully preserved as the boundary, of the fields. An annual inspection of boundary marks will also be made in the presence of the Village Officers and ryots, who are required immediately to repair any of the boundary marks which may be pointed out to them by the Inspectors as defective. A second examination, embracing those fields of which the boundaries were found incomplete, will follow after a reasonable interval, and should it then be found that the owner, holder, or occupant of any field has neglected to make the necessary repairs, he will be required by way of penalty, not only to make the repairs originally directed, but, in addition, to connect each defective mark with the next adjoining by a continuous ridge of earth, one cubit in height, and a notice to this effect will be served on him according to the provisions of Act III of 1846; and in event of his failing to comply with this, the specified boundary marks and connecting ridges will be completed by means of hired labour, and the expense recovered from him as provided in the said Act. Any wilful injury done to any boundary mark is a criminal offence, and punishable by fine to the extent of fifty rupees, under the same enactment.

Form of Examination.

Register of Field Boundary Marks in Village of , Taluka , Zillah , in 18 .

No. of Field.	Sides of the Field on which Boundaries were out of repair at date of — 1st Inspection. Date.	E.	N.	W.	S.	2nd Inspection. Date.	E.	N.	W.	S.	Tenure.	Government. Cultivated.	Government. Waste.	Remarks by Mamlatdar, or other testing officer.
1				1							Government.	1		Entries correct.

General Inspection Return of the state of the Boundary Marks of the undermentioned Villages of the Taluka of in the Collectorate of for the year ending 30th April 18 .

(Number of Division (Mamlatdar or Mahalkari).)	No.	Name of Village.	Total Number of Fields.	Distribution of Fields entered in column 4, of which the Boundary marks were — in good repair at date of 1st Inspection.	all repaired at date of 2nd Inspection.	all repaired subsequent to date of 2nd Inspection — without notices being served.	After notices had been served.	by hired labour at the expense of the Cultivator or Inamdar.	by hired labour at the expense of Government.	Still to be repaired at date of Returns.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
Mamlatdar.	1	Chick Mulloor.	375	200	150	5	10	5	5	..	
	2	Hossoor ..	458	350	100	1	..	..	6	..	

M H 1700—7

G.L. No. 5593 of 1848, para. 46.

24th.—From the Inspection Registers described in the preceding rule, the Mamlatdar of each taluka should prepare and forward to the Collector on the 1st of May in each year a General Abstract according to the form given in the preceding page, of the state of the boundary marks in each village of his charge at the different inspections; the repairs subsequently made, and those still requiring to be so, at the date of his Return. Under ordinary circumstances there ought to be no mark unrepaired at the date, but in event of there being any, the Mamlatdar should be held responsible for the delay, if unable to assign satisfactory reasons for it. On receipt of this Return, the Collector should immediately take measures for the completion of the repairs still to be made; or, if unable to do so, to report the circumstance for the instructions of Government.

85. In addition to the objects provided for in these rules, it would be most desirable to introduce a simple and uniform system of accounts throughout the surveyed districts, by which the disadvantages now attendant on the removal of European and native officers from one collectorate to another would in a great measure be obviated, as the same system of management would then obtain in all. In order to do this effectually, however, it would be necessary to review the whole existing system, and frame the detailed accounts of villages, districts, and collectorates, with reference to the information required by the Presidency and Home authorities; but with our limited time and opportunities, it would be hopeless to attempt an undertaking of such magnitude, and all that we can do is to suggest it for consideration.

86. The subject of remissions has been purposely excluded from the preceding rules, as we consider that all abatement of the established assessment should be regarded as exceptional to the ordinary management of surveyed districts, and ought not to be made unless for special and urgent considerations, which cannot be provided for by general rules. The opinions of the Revenue Commissioner, the Collectors, and Superintendents of Survey have lately been elicited on this important question, which is now we understand before Government, and under these circumstances we think it unnecessary to offer any further suggestions in regard to it.

87. In concluding our Report we have only further to remark that the preceding, or any other, rules for the administration of the survey settlements, cannot be expected to be fully carried out unless the principles on which the survey and assessment have been based be thoroughly understood by the European local authorities; and on this account we have to suggest that, in the event of the views contained in the present communication, or any modifications of them, being approved of by Government, copies of the whole correspondence be furnished to every Collector and Assistant Collector employed in any part of the country to which the survey operations have extended.

We have the honour to be, etc.,

H. E. GOLDSMID,

G. WINGATE,

D. DAVIDSON,

Superintendents of Revenue Survey and Assessment.

Kirkee, 2nd August 1847.

CORRESPONDENCE RELATING TO THE JOINT REPORT.

No. 2258 of 1847.

From

E. H. TOWNSEND, Esq.,

Revenue Commissioner, Southern Division;

To

R. K. PRINGLE, Esq.,

Chief Secretary to Government, Bombay.

Sir,

With reference to paragraph 1 of your letter of 13th March last, No. 617, appointing Mr. Goldsmid to the temporary superintendence of the Deccan Survey, for special purposes, therein specified, I have the honour to transmit a joint Report from the three Superintendents, dated 2nd ultimo, on the practice and objects of their respective surveys. This Report is preceded by an index, which divides its contents nto the following eleven heads:— *Received on the 24th August.*

1st.—Introductory Remarks.
2nd.—Objects of a Revenue Survey.
3rd.—Division into fields.
4th.—Field boundaries.
5th.—Village boundaries.
6th.—Measuring and maps.
7th.—Classification.
8th.—Rates of assessment.
9th.—General observations.
10th.—Rules for the Survey.
11th.—Rules for Revenue Officers.

2. The 1st and 2nd heads of this Report extend as far as the 10th paragraph, in which the objects of a revenue survey are clearly and ably set forth. No comments of mine would tend to elucidate the subject, of which a full statement is already before Government in the joint Report of Messrs. Goldsmid and Wingate, dated 27th October 1840.

Fields.

3. The next subject is a very important one, viz., the manner of of dividing the land into fields. The principle expressed on this subject (paragraph 16) that "it is of much importance that the existing state of things in any village should be as little interfered with as conveniently practicable," should, I conceive, never be lost sight of, and for this end many apparent incongruities, both of size and shape now existing, should be tolerated—a measure which will greatly increase the popularity of the survey. This subject is noticed in paragraphs 5 and 6 of the Government letter of 6th January 1845, No. 72. In the remaining rules and opinions of the Report on this subject I beg to state my entire concurrence. *Paras. 11-21.*

Boundaries.

The vast importance of preserving the field boundaries set up by the survey is well shown in this Report; it is a subject which will require the constant attention of the Revenue Officers. *Para. 21.*

Village Boundaries.

4. Another very important subject—that of village boundaries—is next discussed. The same subject is treated of in paragraph 52 of the joint Report of 27th October 1840, and in the two Government letters quoted in the margin, from which it would appear that the question of enacting a law for the settlement of these disputes is still before the Government of India. The Report states (paragraph 23), "that the main hindrance to their settlement before had been the undue importance attached to them, and that no insurmountable nor even serious obstacles stood in the way of their adjustment;" and again (paragraph 25), "the less importance therefore attached by the authorities to these disputes, the readily will their adjudication be effected." I am not prepared to subscribe to these remarks. The Report does not indeed distinctly show what degree of importance has hitherto been attached to these disputes, and which it considers to be too great, or on what experience the above opinions are grounded. Hitherto I have viewed boundary disputes as matters most difficult to settle permanently. The show of opposition to the settling officer is not indeed great; hence perhaps he is led to think that his decision will be easily enforced; but the boundary marks which he fixes are demolished in a night, and it is most difficult to discover who has destroyed them. In many villages there are hereditary feuds springing from boundary

Paras. 22-28.

13th February 1843, No. 444.

13th December 1844, No. 4475.

disputes, in which both loss of life and property have occurred; and though pecuniary loss is sustained by the continuance of such disputes, and mutual advantage would result from their settlement, I doubt whether even this would compensate for the feeling of wounded pride which would ensue from foregoing the strip of land, a claim to which had from times past been asserted by the village.

5. If, however, the Superintendents of the Survey can permanently settle village boundary disputes as easily as they seem to expect, a great point indeed will have been gained, and a constant source of strife removed. This, however, cannot be satisfactorily ascertained till the lapse of a few seasons shall test the stability of their awards. With reference to the remark at the close of paragraph 23, I can discover no authority in Act III of 1846 for either the formation or preservation of village boundary marks.

Paras. 29-37

Village Maps.

6. The system adopted for measuring land, and for giving permanence to these measurements by village maps, is next explained. The preservation of the latter documents will form an important part of the duty of the Revenue Officers, as they, together with the field boundary marks, form the principal means of perpetuating the work of the survey, which, without them, would speedily disappear.

Paras. 29-79.

Measurement and Classification.

7. The 7th and 8th heads are so exclusively matters on which Survey Officers, or those experienced in such matters, can judge of, that I shall hardly be expected to pass an opinion on them. Government will doubtless observe with satisfaction proof in these details of the minute and careful attention bestowed by the Superintendents of the Survey to render their work complete and correct in the important branches of measurement, classification, and division of assessment.

Para. 80.

Survey Rules.

8. The next subject which the Report embraces is a set of rules for the guidance of surveys generally. These are thirteen in number, and appear excellently adapted for the end proposed. The Report goes on to say that besides the rules above specified, there are various minor details which could hardly be introduced into this Report, and that "greater uniformity than they have endeavoured to enjoin could not be secured, except by placing the several survey departments under one controlling authority fully conversant with the principles and details of a Revenue Survey." In this opinion I wholly concur; and I would respectfully suggest it for the consideration of Government, viz., the expediency of uniting the three surveys under one Superintendent as the only really effective method for bringing all under one system, so far as local peculiarities admit.

Para. 82.

Para. 84.

9. The Report next proceeds to consider "means for ensuring the results of the surveys being turned to the best account, and maintained in their original integrity." This is justly called "a subject of the utmost importance;" it is, in fact, the preservation of the survey system as first introduced in its integrity; and if the survey is important, so must be its "future administration." Twenty-three rules accordingly follow for the guidance of Revenue Officers in surveyed districts, on which I would suggest the following observations:—

Rule 1st is prefatory, and calls for no remarks.

Rules 2nd and 3rd appear unexceptionable.

Rule 4th fixes the garden assessment. At the end of this rule there is a clause to prevent any increase of assessment on a dry-crop field, when any portion of it, entered in the survey accounts as unarable, comes under cultivation. This clause appears judicious, as it infers that such spots of unarable waste are small and almost valueless, and consequently that such assessment as they could pay would not be worth the trouble and interference necessary to ascertain its amount. This inference, however, appears at variance with Rule 13, on which I shall have occasion to remark presently.

See the case of Guenaji valad Harcoji reported on by the Revenue Commissioner on the 24th June 1846, No. 1225.

10. The 5th Rule decides that a cultivator, in whose names a field is entered, is to be considered its holder so long as he pays its assessment. This rule will, however, I think, require to be preceded by one determining in whose name the field shall be entered. Sometimes carelessness or fraudulent intention causes the kulkarni to enter in the village books, as possessor, the name of a person who possibly without justice claims the field; but this entry, if improperly made, should not strengthen a claim; and it is, therefore, important that care be taken, in the first instance, to enter in the books the name of the person who engages for the field (no other being already in possession), and then to collect the entire revenue from him alone so long as he engages for the whole field. A very careless and slovenly system is often followed in this respect, which causes many disputes and much confusion. One man perhaps agrees for a whole field: he then takes one or more partners, and when the instalments are due, he pays *a share* only,

and refers the village officers to his partners for the remainder. A case of this sort, which has recently occurred, forms at present the subject of a lengthened correspondence between this deparment and the Collector of Poona, in which it appears very difficult to discover who is the real owner of the field.

Shares in fields.

11. The 6th Rule suggests no remark. The 7th Rule, which is a good one for the interests of Government, might fall heavily on a ryot who cultivated the same field for many years, and who was unable to take up the portion of it that was left waste by his partner. To oblige a man to give up a field which he possibly inherited from his father, merely because the new boundaries of the survey enclosed it in the same field with that of a neighbour, would be a hardship; and I would, therefore, suggest that the Collectors be allowed a discretionary power in the enforcement or otherwise of this rule, in cases in which the possession of the land exceeded the term of 20 years.

12. The above remarks would also apply to Rule 8, supposing that a field of the largest size contemplated in paragraph 13 of this Report, is cultivated, as here indicated, by three ryots, *A*, *B* and *C*, of whom the first cultivates one-half, and the other two a quarter each, and that these divisions have existed for a long period of years. Supposing *A* to die without heirs, the other two ryots might be quite unable to double the extent of their cultivation, and the alternative of obliging them to throw up their lands would be one of considerable severity. Some modification of this rule, similar to that proposed for Rule 7, would, I submit, be expedient.

A	B	C

Waste Land in fields.

13. To Rules 9 and 10 I am aware of no objection. The 11th Rule is not quite conformable with those sanctioned by Government in the Chief Secretary's letter of 12th February last, No. 390, for regulating the power to cut down trees, and which are, I submit, sufficiently liberal, and should not, therefore, be altered. The 1st clause of Rule 12 appears unobjectionable. With regard to the latter part, supposing the case imagined in the preceding paragraph, *A*, *B* and *C* agree for a certain field, but it is entered in *A's* name only. He dies, and as there is no record to show the liability of *B* and *C*, it is possible that they may resist payment, and that in a court of law it would be difficult to enforce the demands of Government, owing to the non-entry of their respective names in the village books. A more probable result would be the collection by the kulkarni of their respective dues from *B* and *C*, without crediting them to Government, and the entry of the entire balance in the books as irrecoverable, *A* by whom it was due, being dead. To avoid this evil, therefore, I would enter in the books the names of all the partners liable for the revenue of a field.

Waste Land in fields.

14. On what appears to me the inconsistency of Rule 4 with Rule 13, I have remarked when commenting on the former rule. The cases contemplated in Rule 13 appear to be such fields as contain a large portion of waste land, while Rule 4 seems to refer only to those where the amount of waste is trifling; but the practical application of these two rules will, I fear, involve some difficulty; and if many fields come under Rule 13, a duty will fall on our Mamlatdars for which, I fear, that they are ill qualified. I should, therefore, be glad to see the cases to which Rule 13 applies reduced to the smallest number possible, if indeed they could not be wholly extinguished, by completing the classifying of all the fields alluded to in this rule. If this is impracticable however, a statement should be left with the Collector, showing the fields in each village of his collectorate to which this rule is intended to apply.

Grass Farms.

15. The 14th Rule differs little from the system established by Government for letting out arable lands to the ryots (dated 16th October 1844, No. 3621). It is perhaps more definite, and therefore preferable. I allude especially to paragraph 8 of the Government letter, on which I think the rule under discussion is on the whole an improvement. But Rule 16 reserves "*gairan*" free of assessment in every village, while the Government letter grants it only where it has been hitherto enjoyed, and here I think that the existing rule is sufficiently liberal, and that Rule 16 should be modified accordingly.

Unarable Waste.

Unarable waste is at present disposed of by auction, according to the old system, to grazing farmers, who engage for the entire unarable waste lands, of several districts. Rule 14 proposes to blend the arable and unarable waste together in one system of letting by fields. I am hardly prepared to say which system is preferable for the unarable waste; but should the Honourable the Governor in Council think the question worth considering, I would refer it to the Collectors of this Division for their opinion and report. Rule 15 appears unobjectionable, as do Rules 17, 18 and 19.

Increase and decrease of cultivation.

16. The clause in Rule 20 which requires the village officers to send "the parties concerned," viz., those who wish to throw up fields, and "the applicants," viz., those who apply for new fields, to the Mamlatdar or Mahalkari, is, I think, objectionable, as causing unnecessary trouble to the ryots. The village officers may generally be entrusted with this duty under the control of the Mamlatdar and Mahalkari, as proposed in this rule; but the attendance of the different applicants in person at the District Kutcherry would, I submit, be in ordinary cases superfluous. With reference to the period fixed (end of April) for throwing up lands, it no doubt would be desirable that the district officers had the earliest possible intimation of all such changes; but many royts might not be able to determine, at so early a period, the extent of their cultivation for the ensuing year; and I should think that the "*mrigsal*," or 5th June, would be in practice a better date to fix for this purpose.

Instalments.

17. The subject of revenue instalments is already before Government, in a letter from this department, dated 6th January 1846, No. 22; and I beg to state that I quite concur with my predecessor in thinking the end of April full late for the latest instalment in collectorates above the Ghauts. So far, therefore, I dissent from the 21st Rule, which fixes the last instalment for late crops on 1st June. Here it is, I think, worth considering, that whenever the cholera prevails, it is worst during the hot months, especially April and May; consequently that which might have been collected easily in March may be lost altogether by death if deferred till June.

18. With reference to the first part of this rule, which forbids field inspection for the purpose of ascertaining the extent of early or of late crops, I would observe that in many villages the comparative extent of early or late cultivation depends wholly upon the fall of rain: when that is early, so is the crop: and when the early rains are scanty, the land is reserved for a late crop. When they collect the instalments from the different ryots, the village officers must know whether their crops have been early or late, to regulate the time of levying the instalment; and to make this knowledge perfect, field inspection is necessary. This is more especially the case in some seasons when at first the rain falls plentifully, and the ryots are induced to sow early crops, but the after-rain failing, they are obliged to plough up their lands again, and sow a late crop. In such cases field inspection is especially requisite to enable the village officers to ascertain the proportions of either crop when they are collecting the instalments: such an inspection is, moreover, required by Rule 23, and the one inspection may accomplish both purposes.

Field Boundaries.

19. The 22nd Rule, for the preservation of field boundary marks, is an important one. So are Rules 23 and 24, which are for the completion of the same object, and most necessary for the preservation of the labours of the survey.

20. In their 85th paragraph, the Superintendents allude to the importance of introducing "a simple and uniform system of accounts through all the surveyed districts," but state that, for the attainment of this object, their other duties did not afford them sufficient time. It were much to be wished that officers so qualified as the framers of the accompanying report had had leisure to remodel all our village and district accounts. The subject is one of those referred to the two Revenue Commissioners by Government in their letter dated 24th April 1846, No. 1925, and we hope shortly to lay before Government some revised forms of village accounts, which are intended to combine simplicity with uniformity, and to lessen the number of documents which the kulkarnis are now required to prepare. The subject of district accounts will also engage our attention.

Letter No. 467, dated 12th March 1847.

21. The subject of remissions, alluded to in paragraph 86, is before Government in the letter from this department quoted in the margin.

22. In conclusion, I would respectfully suggest that this valuable Report be lithographed, and a copy of it sent to each Collector and Sub-Collector, and each Survey Establishment, and that a copy be also forwarded to the Government of Madras, as suggested in paragraph 3 of my letter of 4th August, No. 1856, to whom I observe, from the list which accompanied the Government letter of 28th May last, that the joint Report of 27th October 1840 has been already sent.

I have the honour to be, etc.,

E. H. TOWNSEND,

Revenue Commissioner, S. D.

Poona, Revenue Commissioner's Office,

10th September 1847.

No. 5593 of 1848.

TERRITORIAL DEPARTMENT, REVENUE.

From

J. G. LUMSDEN, Esq.,

Secretary to Government;

To

E. H. TOWNSEND, Esq.,

Revenue Commissioner, Southern Division.

Sir,

I have been directed by the Right Honourable the Governor in Council to acknowledge the receipt of your letter No. 2258, dated the 10th September 1847, submitting a joint Report from the officers named in the margin, on the practice and objects of the Revenue Surveys under their charge, and in reply to communicate to you the following observations on the propositions and remarks contained in the Report, classed under the different heads into which it is divided.

Mr. Goldsmid, (late) Superintendent of the Revenue Survey and Assessment in the Deccan; Captain Wingate, Superintendent of the Revenue Survey and Assessment, Southern Maratha Country; Captain Davidson, (late) Superintendent of the Revenue Survey and Assessment, Ahmednagar.

Introductory remarks including a detail of the objects of a Revenue Survey and advantages of a Field Assessment—paras. 1 to 10.

2. Among the questions discussed in these paragraphs of the joint Report is that of the superiority of an annual settlement with each ryot according to his actual holding for any year, over a settlement by lease for a certain number of years, and His Lordship in Council does not feel quite assured that the decision at which the Committee has arrived is correct. It is at least not so clearly exemplified as to remove all doubt as to the accuracy of the result.

3. The arguments in favour of the annual settlement are, that it permits the ryot to contract or extend the sphere of his labour according to the means at his immediate command—a privilege of immense importance in a country where the capital of the agriculturist is not only small in itself, but subject to great fluctuations, from the effect of variations of the seasons (*vide* paragraph 44 of Mr. Goldsmid's and Captain Wingate's Report of the 27th October 1840), and that it gives him all the advantages of a long lease, without any of its disadvantages (paragraph 8 of present joint Report).

4. The arguments on the other side are, His Lordship in Council considers, very strong and he would regret to see it laid down as an unchangeable maxim, applicable to all districts and to all states of Indian society, that an annual settlement must be made with each ryot for the land which he may choose to hold.

5. A poor ryot, having a small agricultural stock, cannot well be bound by a lease. His few cattle may die, and then, however favourable may be the terms of his lease, he must relinquish his fields, or the lease must be broken up. But let it be hoped that this is not the case with all. It cannot be that we have not now, and never are to have, any accumulation of agricultural capital. Our farmers will not always be dependent on the results of one season, nor will they necessarily be ruined, if it bring with it scanty crop, loss of cattle, or other misfortunes. The very object of the revision of the assessment throughout our provinces is to eradicate the hand-to-mouth system which has so long prevailed with the agricultural classes, and to create agricultural capital; and we should endeavour to combine with this object those of inducing these classes to look more to the future; of exciting in them feelings of independence; of exempting them, as much as possible, from the pupilage and surveillance of the Government officers; and of attaching them to the soil and to their own particular portion of it.

6. It is not apparent how these objects can be attained more decidedly than by the grant of leases for lengthened periods; while in the continuance of the system of annual settlements Government can foresee, although the great object of leaving the ryot free is gained, that the others run the risk of being wholly neglected.

7. A ryot who, looking beyond the present year, knows that he will have to provide for the payment of a certain revenue for many years to come, must necessarily acquire more prudent and thrifty habits than he who looks to the present year alone, and who knows that, if preferring idleness to industry, he abandon or contract his cultivation, he in that proportion relieves himself of responsibility.

8. The independence of feeling which every man ought to possess can seldom arise when a man knows that he holds his land as it were by an annual tenure; that if he fail to till a certain field, and it be omitted from his holding for one year, his rival may step in to his place and perhaps deprive him of it for ever; and probably nothing tends more to diminish such right

feeling than the inquisitorial visits of Government officers, inquiring what is the extent of his cultivation, and regulating the fluctuating amount of his rent.

9. A lease imposes a wholesome responsibility upon the ryot and secures the Government against fluctuation in the revenue. That responsibility the ryot cannot be expected to incur without some equivalent, nor should the Government expect to gain the security without some sacrifice. His Lordship in Council considers this point has not been sufficiently attended to in our attempts to introduce leases, and hence our failure in parts of Gujarat. We desired to secure everything to Government without making any sacrifice in favour of the lessee.

10. If a farmer possesses ten fields, assessed at Rs. 10 each, or together at Rs. 100, it cannot be expected that he will bind himself to pay Rs. 100 for 30 years for those fields. He would pay no more if he took out no lease, and might often have to pay less. But if the Government, in order to secure a certain unfluctuating revenue, consent to give him a lease for 30 years at Rs. 95, it might be well worth the while of a ryot possessing some capital to take such lease. This is the principle on which, His Lordship in Council is of opinion, leases might successfully be granted.

Division of village lands into fields, and definition of fields by suitable land marks—paras. 11 to 21.

11. The observations contained in these paragraphs of the joint Report, on the division of the land into fields and on boundary marks, are considered judicious.

Determination of village boundaries and settlement of disputes connected with them—paras. 22 to 28.

12. Nearly every boundary dispute of any importance in the Deccan has probably been made the subject of investigation previously to the survey, with a view to settlement, but it will probably be found that not one in a hundred of these disputes has been actually disposed of.

13. In the Dharwar Collectorate there have been up to this time about 1,000 villages surveyed, and His Lordship in Council is informed that, with a few exceptions of no great consequence, the whole of the boundary disputes within them have been investigated and settled during the progress of the survey; that the results afford evidence that no insurmountable difficulties are in the way of the settlement of such disputes by the Survey Officers, and that the awards of the latter will be respected.

14. Until, however, the details of these results are in the possession of Government, no decided opinion as to the practicability of the plan advocated by the three Superintendents can be formed, but in the meantime I am desired to observe that, considering the important object sought to be attained, it is deemed well worthy of a fair trial, and of every assistance and co-operation the local officers can afford.

15. As in the plains, village boundary marks must at the same time define the limits of some particular fields, it follows that their construction and preservation are provided for by Act III of 1846. Moreover, wilful injury and destruction are also punishable under clause 3 of section 42 of Regulation XIV of 1827.

Measuring and mapping the land—paras. 29 to 37.

16. His Lordship in Council is happy to observe the great importance attached to the preparation of the village maps.

17. I am desired to express his full concurrence in all that is recorded by the three Superintendents on the subject of the measurements, and to add that, although it is, no doubt, "unnecessary, and would in many instances be hurtful, to fetter the Superintending Officers with specific rules" as to the manner in which they are to attain the desired results, still the Revenue Commissioners ought from the first to have been informed of the different modes of proceeding, so that they might have guarded against the adoption or continuance of any that are defective, and have prevented any improvements introduced by one Superintendent being unknown to, or unnecessarily rejected by, another.

Classification of dry-crop, garden, and rice lands—paras. 38 to 65.

18. *Classification.*—This is one of the most important, and at the same time the most difficult, operations of the survey. The joint Report explains, with much minuteness, the principal points on which this operation depends, and although, as you justly observe (paragraph 7), these are matters on which practical men alone can fully judge, yet it may safely be said that the system, as it is explained as applicable to all but rice lands, is founded on just principles, and that the particulars are given in a manner which shows the subject to have been well considered and canvassed by the three Superintendents. Government, therefore, approve of the system and the details, the observance of which they advocate. As regards the land forming the exception (rice), His Lordship in Council will be glad to learn that the present Superintendents of the Surveys have been able to agree on some rules for its right classification. Before doing so, however, they should avail themselves of the experience of Mr. Tytler, and examine the rules drawn out for the guidance of that officer's establishment in the Dangs.

Settlement of the rates of assessment—paras. 66 to 78.

19. The explanation given of the mode in which this closing process of the survey is conducted is very clear and explicit.

20. The Right Honourable the Governor in Council is aware that Government must be almost wholly dependent upon the Superintendents of Surveys for the right conduct of many of the details of their operations, for he does not think that the Revenue Commissioners can do more than exercise a very general supervision over them. Few Revenue Commissioners possess the knowledge, and none could devote the time necessary, for a minute scrutiny into them. Those only who have been trained to survey, and with whom all the details of the process are familiar, can venture to offer opinions opposed to those of a Superintendent on many points, and even where a doubt may arise it may be impossible to set it at rest without such minute interference and inquiry as would divert the attention of the Revenue Commissioner from his more ordinary duties so as to cause much inconvenience to the public service.

General observations on preceding subjects—para. 79.

21. The Governor in Council will not, therefore, require from the Revenue Commissioners a greater degree of responsibility than they are capable of fulfilling. But at the same time he thinks that they may reasonably be expected so far to control all the Superintendents under them as to secure a great degree of uniformity in their proceedings.

22. The Right Honourable the Governor in Council agrees with you that the thirteen rules proposed in the joint Report, for the interior arrangement of the Survey Department, appear excellently adapted for the end in view, and that their general enforcement should be at once ordered.

Interior arrangement of the Survey Department—paras. 80 and 81.

23. The proposition contained in the 83rd paragraph is also approved, with the proviso that, if the Assistant Collector in charge of the district is not an officer of some experience, and in the opinion of the Collector and Revenue Commissioner qualified to form a judgment of the system and of the manner in which its details will work, some more experienced Assistant, or the Collector himself, should be associated with the Superintendent. This, however, it is feared, may not always be practicable. Hitherto it has not been found so, and the Superintendent has, in most cases, it is believed, alone introduced the rates in each district as soon as the sanction of Government to them has been obtained.

Future administration of the Survey Settlement—paras. 82 to 87.

24. *Rules.*—In regard to the rules proposed for the guidance of the Revenue Officers in respect to the future administration of the survey (paragraph 84 of joint Report), I have been directed to communicate the following remarks :—

25. Rules 1 and 3 are approved. A Proclamation to the effect of Rule 1 should be published when the revised rates are introduced in a district, and every patel should be furnished with a copy.

26. On Rule 2 the opinion of Dr. Gibson will be called for.

27. Rules 4 and 13. These, as they affect unarable land included in a field, may be open to the objection urged against them by you in paragraph 9. Probably the difficulty arises from terming land covered with dense jungle " unarable," in Rule 13. This term might be strictly defined. Land covered with vegetation, trees or bushes can hardly be included properly in it, as the presence of this vegetation proves the productive quality of the soil, and its capability of being brought under the plough.

28. Rule 5. Your 10th paragraph inculcates a prudent caution in respect to the insertion of the names of parties as holders of fields. Care should be taken that the real holder is well ascertained, and if there be a dispute, no entry in the Survey Books should be made that can give one party a right which he might not on inquiry be found to possess. It is a great object to establish our Survey Books as a complete record of the state of the occupancy at the time of the operation.

29. Rule 6 is approved, provided no *mirasdari*, or other recognized heritable rights, are interfered with.

30. Rules 7 and 8. The observations made by you on these rules are considered just; and to avert the hardships you contemplate, a discretionary power may be granted to the Collectors as to their enforcement, without, however, making the limitation as to time 20 years in cases in which the holder of a portion of a field may have been in occupation previously to the survey. The act of including his field and those of his neighbours in one number is one in which he has no voice, and it should not place him in a worse position than that in which he stood previously.

31. Rule 9 is approved.

32. Rule 10 being in conformity to the views expressed in the Government letter No. 390, of the 12th February 1847, is approved.

3. Rule 11. His Lordship in Council is of opinion that the rules prescribed in the Government letter last quoted, for regulating the power to cut down trees, should be upheld, and that when one tree is felled, two should be required to be planted.

34. Rule 12. The objects of this rule, as well as that of Rules 7 and 8, His Lordship in Council understands, is to discourage the sub-division of fields, so that by being retained entire their sale and transfer, under the provisions of Rule 9, may be promoted.

35. It would be a hardship to refuse to recognize shares of fields already entered in the Government books, and the rights of the holders of such shares are protected by Rules 5, 6, 7, 8 and 9. In giving out waste for cultivation, however, which is the case provided for in the rule under consideration, no prior rights are involved, and we have merely to look to the method best calculated to promote the interests of the ryots and Government.

36. If fields are to be permitted to be split up without limit, and the occupant of every fractional share recognized as holding direct of Government, the inevitable results will be the ultimate sub-division of the whole land into very minute occupancies, accompanied by the impoverishment of the whole agricultural class. Farms will become so small as barely to provide subsistence for those occupied in their tillage, and the surplus, from which the assessment is to be paid, so trifling, that the slightest deficiency in the ordinary crop will suffice to annihilate it. With every precaution it may be impossible to prevent the sub-division of farms as population increases, but assuredly no opportunity should be lost of checking this tendency.

37. In the case of a ryot in whose name a field is entered, and who holds it jointly with others, dying, the want of a record to show the liability of the other sharers would be of but little consequence, for they would be amenable for the revenue under the provisions of sections 3 and 5 of Regulation XVII of 1827 ; and the desire of retaining possession of the land would more probably make the inferior holders anxious to defray their shares of the revenue in order to obtain receipts from the village accountant, with a view to strengthen their claims to continue in possession.

38. But were even the rule to involve the certain sacrifice of balances of revenue due by ryots dying under the circumstances contemplated by you, instead of the remote possibility of such a contingency, it would still be better to submit to the loss than to sanction the alternative of an unlimited sub-division of fields.

39. Rules 14 and 15 are approved.

40. Rule 16 only reserves for free pasturage a portion of the field alluded to in Rule 13, as unsuited in their then state for cultivation and unassessed. This indulgence will, therfore, be limited to the villages in which such waste fields are to be found, and His Lordship in Council agrees with you in thinking that the further restriction (already imposed in Government letter of the 16th October 1844, No. 3621) of the privilege, to the case of villages which have hitherto enjoyed the right of free pasturage, should be continued.

41. The practice of selling the waste, field by field, enjoined by this rule, promises to be more acceptable to the villagers, and more productive of revenue to Government than the plan of selling the entire wastes of several villages or districts in the lump, to parties engaging for the whole.

42. Rules 17, 18 and 19 are approved.

43. Rule 20. His Lordship in Council considers there is some force in your objection to the ryot wanting to take up new land being obliged to proceed for this purpose to the Mamlatdar's Kutcherry. In villages very distant, and especially during the few first years after the introduction of the survey, when it may be presumed that much new land will be taken up, the Collector may be authorized to dispense with the strict observance of the rule.

44. Adverting to your suggestion that the period for giving notice of intention to throw up lands be extended to the *mrigsal*, Government considers that if notice of resigning a field be not given earlier, it will be too late for any other party desiring it to come forward to cultivate.

45. Rule 21. The Governor in Council doubts whether the question of the instalments should be mixed up in these rules with matters immediately connected with the introduction of the survey. He would prefer the separate consideration of the subject, especially as local peculiarities may render it necessary that different periods for the payment of the revenue should be in use in different districts.

46. Rules 22, 23 and 24 are approved.

District and village accounts—para. 85.

47. His Lordship in Council is confident that the introduction of a simple and uniform system of accounts through all the surveyed districts would add so much to the efficiency of our native establishments as to render unnecessary additions, now urgently required, to their numerical strength, and would also considerably lesson the labour of the Collectors and their Assistants in checking the work of the subordinate Huzur, District, and Village agents.

48. I am directed to request that you will immediately report how far, and with what results, you have carried into effect the instructions conveyed in the Government letter of the 24th April 1846 (No. 1925), and that you will transmit, for the opinion of Captain Wingate, whatever forms of accounts you may have approved in concert with the Revenue Commissioner, Northern Division.

49. The instructions of Government on the subject of remissions were conveyed in the Government letter to you, No. 3899, of the 5th October 1847.

Remissions—para. 86.

50. In conclusion, I am directed to convey the acknowledgments of the Right Honourable the Governor in Council to Mr. Goldsmid, and Captains Wingate and Davidson, for the able and lucid report they have now laid before him. It will serve as a Manual in all future surveys, and it should be printed as soon as any modifications to be made in the rules contained in it have been determined.

I have, etc.,

J. G. LUMSDEN,

Secretary to Government.

Bombay Castle, 22nd September 1848.

No. 239 of 1848.

To

E. H. TOWNSEND, Esq.,

Revenue Commissioner, Southern Division.

Sir,

I do myself the honour to submit the following observations on certain points connected with the joint Report of 2nd August 1847, which appear to me to require further elucidation and discussion in reference to comments made upon them in the Government letter of 22nd September last, No. 5593.

2. In the argument for the superiority of the fixed field assessment of our surveys, administered by annual leases, over other modes of revenue management, contained in the introductory paragraphs of the joint Report, the use of the terms "annual leases" and "annual engagements" has conveyed to Government an impression of the nature and operation of our settlements very different from what was intended, and as it is of the utmost importance that no misconception should exist in reference to what may be considered the basis of our whole system, I will devote a few remarks to an attempt to clear up the obscurity resting on our original exposition.

3. The arguments contained in the 4th, 5th, 6th, 7th and 8th paragraphs of the Government letter, in favour of long leases, by which farmers are bound to pay an invariable assessment for the whole of their lands in the lump, are adduced as advantages which are not to be found in the system of settlement enjoined by the joint Report. And an apprehension is expressed that the important objects of inducing the cultivating classes to look more to the future; of exciting in them feelings of independence; of exempting them from the pupilage and surveillance of Government officers; and of attaching them to the soil, and to their own portion of it—run a risk of being wholly neglected under our system of engagements annually renewed. Government further observe "that the independence of feeling which every man ought to possess can seldom arise when a man knows that he holds his land, as it were, by annual tenure; that if he fail to till a certain field, and it be omitted from his holding for one year, his rival may step in and deprive him of it for ever; and probably nothing tends more to diminish such right feeling than the inquisitorial visits of Government officers inquiring what is the extent of his cultivation, and regulating the fluctuating amount of his rent."

4. To the justice of the conclusions set forth in the last quotation I most fully subscribe, and if the description of annual settlement here given were applicable to the survey system, the latter must be admitted to be in many important respects defective. But I am happy to have it in my power to remove so serious a misapprehension of its nature, and trust to be able to show that the Survey Rules will not less effectually render the title of the cultivator to his land secure, exempt him from the interference or surveillance of Government officers, and hold out to him inducements to lay out capital in the improvement of his land, than the system of long leases, characterised by Government as possessing these important advantages.

5. You will observe by referring to Rule 5 of the joint Report that the only way in which the title of a cultivator to any field can be vitiated is through his failing to discharge the assessment laid upon it. And he will be called upon to pay this assessment upon every field entered in his name in the village books without reference at all to the circumstance of its being waste or cultivated. So long as he pays the assessment, no field can, under any circumstances, be struck or left out of his holding, except upon his own written application to that effect, under the provisions of Rule 20; and it will thus be evident that no rival or other party could by possibility step in and supplant him in the way supposed by Government. It seems to me difficult to imagine a more secure title to occupancy than this. It is absolutely free from all

conditions, except the simple one of discharging the Government land-tax, and this condition it is evident could not be dispensed with under any plan of management whatever.

6. The occupant is, moreover, wholly relieved from the interference or surveillance of the Government officers. Their power is limited to the collection of the assessment due from him for the land entered in his name. They cannot demand more or less, nor even the assessment itself, except at the stated periods fixed for the collections. So long as he is ready with the money due at such times they have absolutely no power at all of meddling in his affairs. They have no right to interrogate him as to whether his fields are waste or cultivated, his crops good or bad. The payment of his assessment affords a valid and sufficient answer to all objectors. A more completely independent position for a farmer to occupy than this it is hard to imagine His own industry provides the means of paying his assessment, and he is absolutely free to exert this industry as may seem to him best, without having occasion to defer to the wishes or ideas of anyone. I believe that in no country of the world are the cultivators so thoroughly independent as they will be in our surveyed districts when the rules of the joint Report shall be fully enforced. In the Dharwar Collectorate, where they are already in operation for the most part, their effect is readily observable in the bold bearing the cultivators quickly assume towards their village officers, and other influential parties, subsequent to the introduction of the new settlement.

7. Further, while thus securing to the cultivator a simple and secure title to his land, freedom from interference or surveillance on the part of Government officers, and complete personal independence, the survey settlements may, I think, be shown to be more favourable to the accumulation of agricultural capital, and its application to the improvement of the land, than a system of leases for a term of years.

8. Owing to the laws and customs in regard to inheritance obtaining in this country, and the few opportunities for the employment of capital, except in the cultivation of the soil, the land has at all times been very much sub-divided, and with these conditions, the existence or creation of a body of large wealthy farmers seems hardly compatible. We may hope, under good management, to see agricultural property very widely diffused, and a very numerous class of small farmers enjoying comfort and independence; but there would seem to be few grounds for anticipating the establishment of a class of wealthy agriculturists cultivating large farms under any circumstances in India. And I do not know that this is to be regretted; for the problem, as to the best distribution of national wealth, has been by no means so satisfactorily solved as to enable us, in my opinion, to pronounce decidedly in favour of one or other of these systems. However this may be, our measures have to be framed for the class of small farmers who now prevail universally; and for this class it is admitted that a tenure, involving much responsibility, like that by which the landholder has to pay an invariable assessment for a long term of years, would hardly be suitable.

9. But let us also try the applicability of the survey system to the case of our wealthier farmers, say that of a cultivator holding ten fields assessed at 150 Rupees in all, or 15 Rupees each, and let us suppose that his agricultural capital is increasing, and that the more favourable mode of investing his profits is in the permanent improvement of his land; for example, by digging a well for the purpose of supplying the means of irrigation to a portion of it.

10. Under these circumstances, let us consider which tenure would afford the greater encouragement to such an investment of capital, viz., that by which the cultivator is bound to pay the assessment on his whole farm—150 Rupees for a long course of years—or that by which he pays 15 Rupees for each of his ten fields separately, with the privilege of relinquishing any of them when so disposed. In the former case he is burdened with a heavy responsibility, which he might not be able to meet should misfortune overtake him, and in this case he would risk the loss of his whole farm, together with all the capital laid out upon it. In the latter he has the power of contracting his cultivation, and diminishing his payments from year to year, as circumstances might make desirable, and would thus be able to retain his most valuable fields, and especially those he had invested capital in improving. Can it be doubted that the diminished responsibility of the tenure by which the cultivator engages to pay the assessment upon each of his fields for one year only offers in itself the most direct and palpable encouragement to the investment of capital in the improvement of the soil? Every cultivator holding several fields, values most highly some one of them, and upon this he will naturally incline to invest money in improvements. And will not that system most dispose him to do so which would enable him to retain this most prized and valued portion of his possessions, even if misfortune should compel him to part with all the rest?

11. Further, it appears to me certain that the greater freedom to contract or extend cultivation from year to year, ensured to the ryot by the survey settlements, will be most conducive to the securing of a certain unfluctuating revenue to the State. The revenue depends on the condition of the cultivators. Whatever system is most advantageous to the latter will best enable them to meet the Government demand, and necessarily be most conducive to the stability of the revenue. Reductions in the extent of the holding of individual cultivators, permitted by

the survey settlements, have no perceptible influence on the revenue of a district. Such reductions are met by equal enlargements of the farms of others, and when once cultivation has become general over the land of a district, the effect of these fluctuations on the revenue will become wholly insignificant.

12. The real danger to be guarded against, as well as the greatest obstacle to the permanent success of the survey settlement, will arise through an increase of the population, and is described in the 36th paragraph of the Government letter under consideration "as the ultimate subdivision of the whole land into very minute occupancies, accompanied by the impoverishment of the whole agricultural class." This indeed may be a remote evil, but not the less requiring to be taken into consideration on that account, and further reflection inclines me to think that some further provisions with a view to its timely prevention might be added with advantage to those contained in the joint Report.

13. The most effective means at our command for preventing the land becoming the inheritance of a pauper, or at least poverty-stricken peasantry, is to afford the greatest possible facilities for its conveyance from one party to another, so that when a cultivator becomes impoverished, and, by his inability to cultivate his land properly, deprives the community of the wealth it is capable of producing, that the land may get into the hands of some one better able to turn it to advantage. The customs and native revenue systems of India are adverse to such transfers, and it is, therefore, all the more necessary to adopt measures for giving them effect. Until very lately ejectment for the non-payment of the Government assessment was nearly unknown, and paupers were allowed to linger on year after year in the possession of land they had no means of cultivating, the Revenue Officers contenting themselves with screwing out of them what they could and remitting the remainder. This was particularly the case with *miras* land in the Deccan, which, when the Mirasdar was poor, generally remained in a most neglected condition, and for all the benefit derived by the community from it might almost have been as well sunk under the sea.

14. Rules 3 to 9, and Rule 12, of the joint Report have all been framed with a view to guard against the excessive sub-division of land, and to facilitate transfers; but though the power of ejectment is distinctly reserved by Rule 5, in event of the assessment not being paid, it occurs to me that the course to be pursued in such an event is hardly indicated with sufficient precision.

15. At present the ordinary mode of enforcing the payment of the revenue is by placing *mohussuls* over the defaulter, or by attachment and sale of moveable property; but I think it would be a preferable course to resort, in the first instance, to an attachment of one or more fields, of which the assessment might about equal the balance due, giving the defaulter the option of pointing out the fields to be so attached, as provided in Rule 5, and publishing, in the usual way, that in event of the balance due not being paid by a certain date, the defaulter's right of occupancy in the said field or fields would cease and be sold to the highest bidder, in event of more than one person being desirous of obtaining possession. In event of the right of occupancy being saleable, the sum realisable should go to defray the balance due, and if more than sufficient for this purpose, the portion of it remaining over should be given to the defaulter. In event of the title to the occupancy of the field being unsaleable, and no one agreeing to cultivate it, the ejectment of the defaulter should nevertheless take place, and the field be permitted to revert to waste. In this case the sums due by the defaulter might be remitted, unless it appeared that the balance was withheld from some other cause than inability to pay, when the usual means, by *mohussuls* or attachment and sale of property, might further be put in force.

16. I am inclined to think the process for ejectment just described would prove a very effective expedient for realizing the revenue, and when it failed in this, it would yet have the obvious advantage of getting land out of the hands of a person unequal to the discharge of the responsibilities connected with its occupancy, and wherever there happened to be a demand for land, secure by the sale of the title to the highest bidder, that it should fall into the possession of a person of means. By thus bringing land into the market, traders, pensioners and other parties having capital would probably be induced to lay it out in the purchase of land, to the great benefit of agriculture and the community at large. Some remarkable instances of this have come under my notice in the Dharwar Collectorate, and it is my belief that they will be numerous when it becomes generally understood that land may be sold and purchased like any other commodity. When the process of ejectment is used in the case of *miras* land, the *mirasi* tenure should, in my opinion, always be declared forfeited, and the land entered in the accounts thenceforward as Government. The ordinary tenure of Government land under the Survey Rules is perhaps as favourable as could be devised, and being free from the objections connected with sub-division by inheritance, and insecurity of occupancy to which the *miras* is liable, it would, in my opinion, be very desirable to substitute it for the latter, whenever practicable.

17. I will now proceed to notice, *seriatim*, the rules of the joint Report which have been reserved by Government for further discussion.

Letter to Acting Secretary to Government, dated 26th October last, No. 206.

18. I have already, in a separate communication noted in the margin, stated my views in regard to the opinion given by Dr. Gibson upon Rule 2.

19. In reference to the remarks upon Rules 4 and 13, I would observe that the former rule refers to portions of unarable surface, such as rocky ground, *nallas*, etc., but not land covered with jungle, included in fields suited for cultivation, upon which an assessment has been fixed. The latter, on the contrary, refers to fields entered in Survey Registers as wholly unarable, and upon which, therefore, no assessment has been fixed. The two rules, therefore, apply to distinct cases, and cannot, I think, be misapplied in practice. Some of the fields coming under Rule 13 are not from the nature of the soil unarable, but from the circumstance of their being now covered with jungle, which did not permit of their being sub-divided into fields of the usual size, and classified in the course of the survey. These, or portions of them, may be expected in the course of time to be cleared and cultivated, but should not be allowed to be so until the fields upon which an assessment has been fixed have been all, or nearly all, occupied. It is probably only in rare instances that the Mamlatdars will have to fix an assessment on the cultivated portions of such fields under Rule 13. I think, therefore, no risk of misapprehension will occur through both rules being allowed to stand as at present.

20. In regard to Rule 5, I have to observe that in the survey of the Southern Maratha Country the preparation of a trustworthy and correct Register of the holders of fields is effected in introducing the survey rates of assessment. Every person having a field entered in his name, or having claim to land, is summoned to attend at the settlement, and when the assessment of each field has been fully explained to the holder or holders, the field is entered in the Register in his or their names for the ensuing year, in event of their agreeing to cultivate it at the survey assessment, and all disputes as to occupancy decided by the European officers on the spot. Copies of these Registers, which may be considered among the most important documents connected with the survey, are then taken by the village accountants, who are required to prepare their Cultivation Returns in strict accordance with them, and the originals are deposited with the Collector. I am having the forms in which the Registers are prepared lithographed, in order to render it impossible for any fictitious documents to be substituted for the originals at any future time; and whenever the correctness of the village books happens to be called in question, they will afford the means of settling the point. Rule 5 is to be considered applicable to *bonâ fide* entries in the village books; but if we admit claims to the possession of land from parties whose names do not appear in them, and have not been fraudulently, or through mistake, omitted to be entered, I see no probability of the tenure of land becoming sufficiently simple and secure to admit of its being freely sold and transferred. If any other title to the possession of land than that of being entered in the public accounts as the party responsible for its assessment be recognized, I feel certain that the most important eventual benefits to be anticipated from the survey will never be realized. I consider Rule 5 perhaps the most important in the joint Report, and would strongly recommend that it be retained without qualification.

21. After weighing, to the best of my ability, the arguments adduced in the 11th and 12th paragraphs of your letter, and in the 11th paragraph of Mr. Secretary Lumsden's, I incline to the opinion that it would be advantageous to retain Rules 7 and 8, without allowing a discretionary power to permit, under certain circumstances, a sharer in a field to cultivate his own portion only, while the rest is allowed to become waste. Such a permission would, I much fear, lead eventually to great laxity of management, while it recognizes a departure from the cardinal principle laid down in Rule 3, that no field is, for any reason whatever, to be let for less than the survey assessment. Fields generally contain good and bad soil, and when once a share of a field is allowed to become waste, how are we to prevent the holder of the remaining share from appropriating the best part of the field as his particular portion, and leaving the inferior land as the thrown up share, so as thus to take away all chance of the whole field being again brought under cultivation? The boundaries of the interior shares of a field are not marked out or described, and could not be so without incurring the danger of introducing confusion into the Survey Records; and even if this were done, the permission would entail the evil of an annual inspection and measurement to ascertain that the Government waste was not being encroached upon.

22. I believe that cases of real hardship under the rules in question would rarely, if ever, occur; but I feel certain that if the latter are allowed to be broken through under particular circumstances, the exceptional cases will multiply to an extent likely to vitiate the whole survey system. Every general plan of management must involve hardship in occasional instances to individuals; but if calculated to promote the general good, I should deeply regret to see its integrity broken in upon for the sake of a few exceptional cases. The preservation of the integrity of the survey fields appears to me an object of such paramount importance, as far to outweigh the hardship of saddling a cultivator with a little more land than he wants, or even compelling him to relinquish some fractional portion of his paternal inheritance. If his means are so small as only to enable him to cultivate a fraction of a survey field, it would be a public benefit, in my opinion, to get the land out of his hands, and thus admit of the whole field in which his fractional share is included being transferred to some more substantial cultivator. There is danger on the side of over-leniency, as well as over-severity; and I am well persuaded that our revenue management generally is more open to the former than to the latter charge. Small farmers in particular parts of Europe have been got rid of with a degree of unscrupulous-

ness that may have merited censure, but the rules of the joint Report, when administered with even the most unbending strictness, will, it may be feared, hardly suffice to prevent the survey field becoming split up into fractional shares to a greater extent than at present.

23. I have requested you to furnish me with a copy of the rules regarding the cutting down of trees, contained in the Government letter No. 390 of 12th February 1847, which Government desire to be substituted for Rule 11 of the joint Report, and in event of their appearing to call for any remark on my part, I will submit my sentiments in regard to them in a separate communication.

24. The object sought to be attained by Rule 12 is described and approved of in the 34th, 35th and 36th paragraphs of the Government letter; but subsequent to the date of the joint Report instances have come under my notice when the strict enforcement of Rule 12 would have perhaps needlessly prevented the cultivation of a large survey field bearing a high assessment; and I would, therefore, propose the addition of a clause to the rule, to the effect that when the assessment of a waste survey field amounts to or exceeds 20 Rupees, it may be entered in the names of two or more holders, on the condition that the assessment of any single share shall not fall short of 10 Rupees. This would effectually prevent its sub-division into small patches, and at the same time facilitate the cultivation of any fields of more than the ordinary size and value, for which there might be no single individual willing to engage.

25. With reference to the remarks in paragraph 43 of the Government letter upon Rule 20 of the joint Report, I would observe that the giving up of an old, or taking up of a new, field, may be considered a most important act to a cultivator, and that it, therefore, does not appear hard to require him to undertake a journey to the Kutcherry with a view to its being duly ratified. The object of the rule is to give additional security to the tenure of the holder of land by making the act of relinquishing or entering upon possession a public formal transaction requiring the sanction of the Mamlatdar or Mahalkari to its validity, so as to prevent the chance of anyone being deprived of his land through collusion with the village officers, or otherwise. The relaxation of the rule in particular villages for a year or two subsequent to the introduction of the survey, while much new land is being taken up, might not be followed by any injurious consequences, but I would strongly recommend that it be strictly adhered to in all cases connected with the relinquishment of land previously cultivated.

26. In reference to the remarks on the same rule, regarding the date fixed for receiving notices to resign fields, I am of opinion that the object of enabling the cultivator to make up his mind in regard to giving up any field at so early a date as the 30th April, would be accomplished by the addition of a clause to the rule making it incumbent on the village officers to assemble all the ryots on the above date, and after explaining to them that they would have no other opportunity of relinquishing any of their fields, take down at once the names of all those wishing to do so, and send the list with the parties concerned to the Mamlatdar. A public settling day of this kind would deprive the ryot of any plea for remissions on account of uncultivated fields, owing to forgetfulness of their exact date for resigning, and such like excuses, which it would be desirable to prevent, if possible.

27. Government think it preferable that the periods to be fixed for the payment of the instalments forming the subject of Rule 21 be disposed of apart from the ordinary rules; and though not disposed to dissent from this arrangement, I would yet respectfully submit that the settlement of those periods is of very great importance to the success of the survey settlements, and I trust, therefore, it will not be considered irrelevant to offer in this place the following arguments in favour of those fixed by Rule 21. The proposed instalments would fall due on the 15th December, 1st February, 15th March and 1st May, in the case of districts when the early crops on an average of seasons predominate, and a month later, viz., on 15th January, 1st March, 15th April and 1st June, in the remaining districts. Three principal objects were in view in selecting the periods in question :—*Firstly*, To enable the cultivator to provide funds for the payment of his assessment from *bonâ fide* sales of produce. *Secondly*, To distribute the collections over a period of six months, instead of four, as at present is generally the case, in order to afford the cultivator greater facilities for the disposal of his produce, and prevent prices becoming needlessly lowered during the collecting season, by forcing sales of produce at a sacrifice, which will always be the case when the instalments follow each other too closely. *Thirdly*, To have the instalments invariable, under all circumstances, for each district, that the cultivators may be taught to use foresight, and adopt timely measures for providing the funds necessary to the liquidation of their rents, by removing the uncertainty, and opportunities for jobbing and favouritism, attendant on the plan of collecting the revenue by variable instalments, according to the report of village officers as to the proportion of early and late crops grown in each particular season. All of these objects I deem very important; and all will, it seems to me, be fully attained without the entailment of any countervailing disadvantages, by the adoption of the periods for the collection of the instalments mentioned in the rule.

28. In the earliest districts, viz., those lying immediately east of the Ghauts, in which the whole crop, with some few exceptions, belongs to the early harvest, no part of it could be got ready for market and sold much before the 15th of December; but by making an effort a cultivator could manage to sell by that time sufficient produce to make up the first instalment,

which is only one-fourth of his whole assessment. An earlier date, then, than the 15th of December could not be fixed upon anywhere without defeating one main object of the rule, which is to enable the assessment to be provided by actual sales of produce, instead of by funds taken up at an excessive rate of interest from money-lenders. In these early districts a considerable portion of the crop would be ready for market before the 1st of February, and there would be no difficulty in selling it in time to provide the 2nd, 3rd and 4th instalments. In the case of the latter districts there would be everywhere a sufficient proportion of early crops grown to furnish the means of paying the first instalment, falling due on 15th January, and the late crops could be got ready and sold in time for the payment of the remaining three instalments.

29. In the case of both early and late crops, I feel assured that the adoption of a shorter interval than six weeks between each instalment would either have the effect of forcing sales of produce and bringing down prices, or of driving the cultivators to the money-lenders, from the want of time and opportunity to dispose of a sufficient portion of their crop to meet each succeeding instalment. I have frequently conversed with intelligent cultivators on this subject, and they have always been sensible of the great advantage that would result to them from lengthening the intervals between the instalments, from a month to six weeks, and have freely admitted that, under such circumstances, they would never have occasion to borrow, or dream of doing so, in order to raise money for the payment of their rents.

30. The only objection occurring to me as likely to be raised against the adoption of these instalments has been alluded to in the 17th paragraph of your letter of 10th September 1847, in which you express an apprehension that, by deferring the last instalment to so advanced a period of the year as the 1st June, in the case of late districts, there would be danger of a portion of the revenue being never realized at all. In regard to an untried experiment we can only reason from analogy, or state probabilities; but my own experience—and I have had more than once opportunities of observing the effect of deferring the instalments to later periods than had previously been in force—leads me most confidently to anticipate that the effect of the proposed change will be quite the reverse of that apprehended and as surely facilitate the punctual realization of the revenue, as it would, without doubt, prove of advantage to the ryots. Deaths by cholera have been very numerous in the settled districts of the Dharwar Collectorate before the close of the collecting season, but I believe it will be found that they have never occasioned the loss of a rupee to Government. In every instance, or at least in so many that the exceptions become of no moment, the fields of deceased cultivators are retained by their heirs, who pay the balance gladly in order to secure possession of them. When the forfeiture of the field is made the penalty on non-payment, I do not believe that one instance out of a hundred would occur in which the balance could not be realized, and even in this case it would be necessary to suppose that the previous incumbent died a pauper, for otherwise the balance could be raised from the property left by him, or from his heirs, whether they retained possession of his fields or not. I firmly believe that in practice it would be found that the postponement of the instalments would not in the least degree increase the loss of revenue which has hitherto occurred through deaths.

31. And if it be said that it would, however, occasion loss in the case of very poor cultivators, whose necessities might compel them to part with their whole produce before the last instalment became due, and who had nothing besides from which it could be realized, I would reply that nothing more desirable could occur, and that the sacrifice of revenue here contemplated would be far more than counterbalanced by the advantage that would accrue from ejecting such paupers from their occupancies, so as to allow of the land falling into the hands of substantial cultivators. I believe, however, that instances of this kind would very rarely occur.

32. I have only further to suggest the advantage of re-arranging the rules, when the various additions, omissions and alterations to be made have been finally settled, and that Marathi and Kanarese translations of these amended rules, after having received the approval of the Revenue Commissioner, should be lithographed, and furnished to the several Collectors for the use of their district and village establishment. In my opinion the records of every village should be supplied with a copy of the rules, for, unless this be done, I do not see how the village officers and people generally are to acquire an adequate knowledge of the principles and practice of the survey settlements, which will have so important a bearing on other future welfare.

I have, etc.,

G. WINGATE,

Supdt., Revenue Survey and Assessment, S. M. C.

Belgaum District, Superintendent's Office,
at Camp Baba-Nagar, 23rd December 1848.

No. 17 of 1849.

To

H. TOWNSEND, Esq.,

Revenue Commissioner, S. D.

Sir,

In accordance with the instructions conveyed in your memorandum No. 3330 of 13th October last, along with which were received copies of your letter to Government No. 2258 of 10th September 1847, transmitting a joint Report from the three Superintendents of Revenue Survey, dated 2nd August 1847, and Mr. Secretary Lumsden's reply No. 5593 of 22nd September last, I have the honour to submit such remarks as appear to me to be called for by the purport of the Government letter.

2. A perusal of the correspondence leads me to conclude that it is only necessary that I should state such additional arguments as occur to me, regarding those questions brought forward in the joint Report, which are still under discussion, and this I shall, therefore, proceed to do as briefly as possible.

3. In paragraphs 4 to 10 of the joint Report the objects of a revenue survey are described and along with other questions the superiority of an annual settlement with each cultivator, according to his holding for the year, over a lease binding him down for a longer period, is discussed. With reference to this subject it is stated in paragraph 2 of the Government letter that "His Lordship in Council does not feel quite assured that the decision at which the Committee has arrived is correct. It is, at least, not so clearly exemplified as to remove all doubt as to the accuracy of the result." As I cannot hope to express my sentiments in favour of the annual settlement more clearly than has been done by the Committee, I shall not attempt to do so at all. It may not be out of place, however, to consider how both systems would work if carried out in practice, or whether, under the existing deficiency of capital and the generally impoverished condition of the cultivators throughout the districts hitherto surveyed and those under survey, it would be practicable to introduce any satisfactory system whereby the survey settlements could be administered by long leases. The following statements relative to the taluka of Rahuri, of this collectorate, and which, with respect to farming capital and capabilities is perhaps on the whole not an unfavourable specimen of a Deccan district, may tend to elucidate this mode of viewing the question.

4. In the above district there are about 200,000 acres of arable land, of which from 60 to 80,000 acres are at present under cultivation. There are only 8,475 working bullocks in the district; and from my knowledge of the general poverty of the cultivators, I should think it no exaggeration to assume that four-fifths of this class are more or less involved in debt. It is evident that even under the influence of fixed and equitable rates of assessment, the district can only slowly and gradually recover from such a state of depression, and that a long period must elapse before farming capital can be accumulated to the extent required for the complete development of its agricultural wealth. Unless the present amount of farming stock were at once trebled or quadrupled, it would be impossible immediately to bring under proper cultivation all the lands of the district. The revised survey rates, by securing a fair profit to the cultivator and enabling him by degrees to free himself from his liabilities, and to add to his resources, will doubtless in a great measure effect this, but only slowly and progressively; and that the result can be attained at all, it seems essential that the cultivators be left entirely independent and unfettered.

5. In introducing revised rates into a district similar to that described above, it would, I conceive, be very dangerous to attempt to bind cultivators by long leases. The settling officer would have no satisfactory data whereby to ascertain whether a cultivator, desirous of entering into a contract of the kind mentioned in paragraph 10 of the Government letter, possessed sufficient capital to enable him to meet his engagements. Were a cultivator to contract for more land than his means warranted, or were he at any time to be deprived, by adverse circumstances, of a portion of his farming stock, he would have to resort to the money-lender or become bankrupt, and throw up his entire holding; and in either case he would be in a much worse condition than before. A more general view of the question would exhibit the same results on an enlarged scale. Were all the lands in the district leased out, and a succession of unfavourable seasons to occur, during which period the cultivators could neither earn an income sufficient to meet their own wants and the Government demands, nor be able to contract their cultivation and liabilities according to their diminished returns, they would have as a matter of course to encroach on their capital; or in other words, the district might be placed in the position of a person who is living beyond his means and who, finding the interest on his capital insufficient for his expenditure, is obliged to resort to the principal, and who thus in time effects his ruin.

M H 1700—11

6. But allowing that the settling officer could originate in a satisfactory manner the scheme of leasing out the holdings for lengthened periods, the general condition of the cultivators would only admit of a very small portion of the district being taken up for cultivation on such terms at the time of the introduction of the revised rates; and should the system gradually be brought into operation during the period of 30 years for which the latter are fixed, it is to be apprehended that in its working it would afford much room for the display of the intriguing propensities of our native officials, and that it would necessarily involve a more minute scrutiny into, and interference with, the affairs of the cultivators than would be compatible with those feelings of independence which it is so desirable to excite in them.

7. The above considerations alone would lead me to conclude that in those districts to which the survey operations have hitherto extended it would be difficult, if not impraticable, to introduce leases for lengthened periods with any hopes of successful results, and that it is only by means of annual settlements that the revised rates can be administered. Fluctuations in the cultivation and revenue are not to be attributed to short leases but to the deficiency of capital in a district, the general poverty of its inhabitants and the obstacles presented to them in the acquisition of gain. No fears, I should think, need be entertained of the cultivators becoming, under favourable circumstances, prosperous and independent. They are, as a class, most persevering, industrious and shrewd, and the prospect of success alone is wanting to stimulate their energies in the pursuit of gain. Were the cultivators, as a body, in good circumstances, and agriculture a profitable occupation, remissions and inspections of crops might be entirely done away with without danger to the interests of the ryot or eventual loss of revenue to Government.

8. The subject of the settlement of village boundary disputes is treated of in paragraphs 22 to 28 of the joint Report, paragraphs 4 and 5 of your letter, and paragraphs 12 to 15 of the Government reply, and as the only doubt regarding the practicability of the scheme proposed by the Committee relates to the permanency of the settlements effected by the Survey Officers, I have no hesitation in stating my conviction that if the decisions be considered by the local officers as binding and unchangeable, and upheld accordingly, there will not be the slightest difficulty in preserving them.

9. The great difficulty in maintaining former settlements has been in most cases the impossibility of ascertaining from the written descriptions thereof the boundaries intended to be defined, and the consequent inability of the officer, to whom at any subsequent period a reference regarding a settlement might be made, to judge of the merits of the case, without examining an immense mass of contradictory documents, any attempt to elucidate which, by recording further evidence, only tended to nullify the settlement, and to leave the dispute in a somewhat more complicated state than before.

10. The boundaries settled by the Survey Officers are defined by marks, and are permanently recorded in the village maps. It is true that the marks may be destroyed, but as their destruction constitutes an offence which renders the perpetrators liable to severe punishment according to the regulations, such will very seldom occur, and the settlements would not be affected thereby, as the line of boundary can easily be established and renewed by means of the map. I beg to remark, however, that although it might be difficult in some cases to obtain legal proof as to the parties actually engaged in the destruction of the marks, such a work could very seldom be effected without the knowledge and connivance of the village officers, as the boundary marks are numerous and of large size, and to remove them entirely would occupy much time and labour.

Para. 18 of Government letter.

11. A further consideration of the subject of rice classification does not enable me to bring forward any rules which would be generally applicable to all the surveys. The rice lands of this collectorate differ very much from those of Dharwar. Mr. Tytler, whom I have consulted, informs me that he observes that there is even a great difference between the Desh and Dang rice lands of this zilla. There is probably a much greater difference still between the rice lands of the countries above and below the ghats; I am, therefore, of opinion that until we have more certain data to guide us, it would be inexpedient to attempt to draw up general rules for the classification of rice land.

12. With reference to paragraph 23 of the Government letter, I would beg to suggest that paragraph 83 of the joint Report be modified and stand as follows:—

83. The introduction of the survey settlements should, in our opinion, be effected by the Superintendent, in conjunction with the Collector, when circumstances admit of this officer's presence without interruption to the other duties of his charge, in order that the latter may be enabled to judge of the system, and the former have an opportunity of observing the practical working of the details, and of explaining them fully to the local Revenue Officers in charge of the district, as well as of overcoming any difficulties, and meeting any objections, which may present themselves in the course of the settlement. In case of the Collector not being able to attend, he should nominate an experienced Assistant to be associated with the Superintendent on the occasion.

13. The concluding part of Rule 4 of paragraph 84 of the joint Report, as surmised in the 14th paragraph of your letter, only applies to cases in which small internal portions of land are deducted as "unarable" from fields on which an assessment has been fixed, and therefore does not appear to call for amendment. Rule 13, on the contrary, applies to fields on which no assessment has been fixed, but which hereafter might be brought under cultivation; for instance, tracts of dense jungle, which it would be impossible at the time of survey to break up into numbers, and classify, but which might contain very good arable land. The fact of these fields being entered in the registers without any assessment having been fixed on them, would sufficiently indicate them to the local officers, but the latter might have some difficulty in fixing rates at a future period should the fields, or portions of them, be taken up for cultivation. To obviate this I would propose that the lowest rate per acre entered in the registers for other dry-crop lands of the village be levied. This appears just, as, though the lands might actually be capable of paying higher rates when cleared and prepared for cultivation, a considerable expenditure of labour and capital would in the first instance be required. It would not perhaps be advisable to enter rates for such lands in the registers, as they might tend to mislead, should the assessment be revised at the termination of the period of 30 years, for which the settlements are binding. Rule 13 might be modified as follows:—

Paras. 9 and 14 of your letter.
Para. 27 of Government reply.

13. There are some survey fields, consisting in great part of land covered with dense jungle, or otherwise unsuited in their present state for cultivation, upon which no assessment is placed in the Survey Registers. In the event of portions of such fields being brought under cultivation, rates of assessment should be fixed by the Mamlatdar upon the acres under tillage, equivalent to the lowest rates for dry-crop soils in the same village. This rule applies to all fields in the Survey Registers on which rates of assessment have not been fixed.

14. During the progress of the survey operations, all disputed claims to the occupation of fields are noted, and they are investigated and settled by the Superintendent when introducing the revised rates, and agreeing with each cultivator for the land to be taken up by him. With regard to fields the occupation of which is not disputed, the rights of the *bonâ fide* holders are maintained, and their names are entered in the cultivation returns accordingly. After the introduction of the settlement the proper insertion of the holder's name in the cultivation returns is, I conceive, provided for by Rule 20, which does not give village officers the power of making entries on the subject in the village account without an order from the Mamlatdar or Mahalkari. Under these circumstances no alteration suggests to me by which Rule 5 would be improved.

Para. 10 of your letter.
Para. 28 of Government reply.

15. Very few cases in this collectorate would come under the provisions of Rules 7 and 8, as the holdings are generally of larger area than that required by Rule 1 of paragraph 17 of the joint Report. As these rules, however, only contemplate a cultivator being obliged, under certain circumstances, to enlarge his holding to a size capable of being cultivated by a single pair of bullocks and no more (*vide* Rules 5 and 7 of paragraph 17), I can anticipate no obstacles to their satisfactory working. The rules modified according to the tenor of the remarks contained in paragraph 30 of Government letter would stand as follows:—

Paras. 11 and 12 of your letter.
Para. 30 of Government reply.

7. When two ryots hold a field, and one of them relinquishes his share, or dies without heirs, the share thus lapsing is to be offered in the first instance to the other sharer before it is offered to any other; and in event of the said sharer declining it, and no other party applying to take it up, the former must relinquish his share too, and allow the whole field to become waste, unless on an appeal being made by the party concerned the Collector shall, from inquiry into the case, see fit to decide otherwise.

8. When there are more sharers than two in a field, and any of them relinquishes a share, it should be offered as above to the sharers in the first instance, beginning, in event of their failing to settle the matter amongst themselves, with the largest sharer, and so on to the least. If none of these nor any other party be found to take up the relinquished share, the whole field must be thrown up, unless on an appeal being made by the parties concerned the Collector shall, from inquiry into the case, see fit to decide otherwise.

16. According to the purport of paragraph 33 of the Government letter, Rule 11 would require to be modified as follows. I have assumed that the rules prescribed in Government letter No. 390 of 12th February 1847, for regulating the power to cut down trees, do not apply to cases in which the trees might become the property of a holder of Government land by purchase under the provisions of Rule 2.

11. Holders of Government fields, or occupants of Miras Judi or Inam fields holding the same from Government, have no right to cut down trees growing therein, unless by express permission, and according to the rule sanctioned in Government letter No. 390

of 12th February 1847. Those trees however, which have become the property of the holder by purchase under the provisions of Rule 2, may be cut down without permission. In all cases trees growing on the boundaries of fields must be preserved as land-marks.

Para. 15 of your letter.
Paras. 40 and 41 of Government reply.

17. With reference to the remarks contained in paragraph 41 of the Government letter, I beg to suggest that Rule 15 be modified as follows :—

15. The grazing of the unarable and other fields not subjected to assessment in the Survey Registers should be sold by auction by the Collector, as in the preceding rule; a reasonable proportion being set aside for the free pasturage of such villages as have hitherto enjoyed this right.

Para. 16 of your letter.
Para. 43 of Government reply.

18. With respect to the clause in Rule 20 which requires those ryots who relinquish fields or take up new ones for cultivation to attend at the Mamlatdar's or Mahalkari's Kutcherry, I would respectfully state my opinion that, although some trouble may be caused to the ryots in consequence, there are on the other side many reasons which might be urged in favour of its enforcement. Were the applicants to appear before him, the District Officer would be better able to satisfy himself that the interests of Government are properly attended to; whereas such might not always be the case if the details be left to the managements of the village officers. The fraudulent practices and the bad results arising therefrom, which are described in the 10th paragraph of your letter, and which, it is to be feared, are not confined to a single village or district, could not be easily guarded against for the future, if the village officers be licensed to make their own arrangements regarding the disposal of the village lands.

19. The very unsatisfactory systems which have prevailed in some districts, regarding the giving out of land for cultivation, have probably in many cases impressed the village officers and cultivators with very loose notions on the subject; and every precaution ought to be adopted to amend this in districts especially where revised rates are being introduced, and the successful operation of which depends so much on the manner in which they are administered. Formerly village officers were sometimes discovered to be cultivating fields, the names of other holders being entered in the accounts; many cultivators were allowed to be continually changing their holdings, or to take up portions of fields for cultivation; and that these and other irregularities may be entirely put a stop to, it appears to me to be necessary that a vigilant watch be kept on the proceedings of the village officers, and that they should be entrusted with as little power as possible.

20. In many villages the Kulkarni is the only person who can read and write, and unless the party wishing to take up a field be sent with his application to the District Officer, the latter must be entirely dependent on the statements of the Kulkarni; and as under the revised rates there are in many cases several applicants for the same field the Kulkarni might unduly favour the interests of his friends or of those cultivators who choose to propitiate him by means of a present.

Paras. 17 and 18 of your letter.
Para. 43 of Government reply.

21. I am not prepared to state how Rule 20, regarding revenue instalments, would operate generally throughout all the surveyed districts, and therefore refrain from making any remarks on the subject.

I have, etc.,

G. S. A. ANDERSON,

Superintendent, Ahmednagar Revenue Survey and Assessment.

Superintendent's Office,
Ahmednagar, 21st February 1849.

P. S.—With reference to your letter No. 68 of 9th ultimo, I beg to apologise for the delay which has occurred in forwarding this letter. My time has been so much occupied by other duties that I have been unable to transmit it at an earlier period.

G. S. A. ANDERSON.

Revenue Commissioner's letter.

Minute by the Right Honourable the Governor, dated 20th October 1849, concurred in by the Honourable Mr. Willoughby and the Honourable Mr. Blane.

Para. 2.

The Revenue Commissioner, Southern Division, informs us that he fully concurs in the remarks made by Captain Wingate in paragraphs 2 to 11: so do I; and so, I anticipate, will my more experienced colleagues, when they read the very forcible and well-expressed arguments used by that most able and intelligent officer.

2. The objections made by the Revenue Commissioner, Southern Division, in paragraph 3rd will, I am of opinion, be met, as far as is at present possible, by adding the following words to Rule 5:—" and in cases where the tenure precludes summary ejectment, the Collector will observe the forms necessary to give his orders the force of a legal decree." Revenue Commissioner's letter. Para. 3.

3. In the remarks made by the Revenue Commissioner in paragraph 6 regarding the other provisions of this (the 5th) rule, I concur. " 6.

4. The explanation given by Captain Wingate shows that Rule 4 is not in any respect at variance with Rule 13, and the adoption of the proper technical words, when these rules are rendered into the vernacular languages, and the rendering of Rule 13, as proposed below, will no doubt prevent the local Revenue Officers misreading either. In the English version of the Rule 4 the word " barren " may be substituted for " unarable." " 5

5. I do not approve of Lieut. Anderson's proposed amendment of the latter portion of Rule 13 regarding the rate of assessment to be imposed, but would adopt that substituted by him for the former portion. " 17.

6. Rules 7 and 8 should in my opinion be relaxed only in cases in which " any of the co-sharers in a field have held possession of their land for upwards of 20 years," and then never but in cases in which the Collector himself, or an experienced Assistant, may consider the relaxation absolutely necessary to prevent considerable hardship being entailed on individuals. " 7.

7. For the reasons recorded by my immediate predecessor in the Government, in paragraphs 27 to 31 of his Minute of 16th November 1847, I am averse to any modification of Rule 12, but, being willing to defer to the opinion of officers possessing the practical experience of Messrs. Townsend and Wingate, will not object to the alteration they propose. " 9.

8. Captain Wingate's arguments in support of Rule 25 are certainly worthy of attention, and would have appeared to me to be conclusive, but for the practical objection raised by Mr. Townsend at close of paragraph 10, an objection to which, I think, Captain Wingate must yield. Rule 25 should, however, be so altered as to give due form to the act of resigning or taking up a field, and, as far as can be, to prevent " jobbing " on the part of the village authorities. The arrangement proposed by Captain Wingate in paragraph 21 should certainly be enforced, as recommended by the Revenue Commissioner. " 10 " 21. " 11

9. I am in favour of Rule 21 standing as originally proposed, but shall not object to the Collectors being informed, with reference to this rule, that if they consider necessary any alteration in the kists therein laid down, they are forthwith to state in detail their reasons for so thinking, in a letter to the Revenue Commissioner, who will forward the same to Government. The Collectors may be so informed in a foot-note to the English version. " 12.

10. I do not approve of the alteration proposed by Lieut. G. S. A. Anderson in paragraph 12 of his letter. If the Collector himself holds direct charge of the districts, he will of course be present at the introduction of the survey settlement, as will he also be if the Assistant Collector in charge is not sufficiently experienced to form a correct opinion as to the merits of what is being done, or if, for any other reason, he thinks proper to watch proceedings. The Assistant himself, though ever so inexperienced, should also be present, for he cannot be in a better school in which to learn the most important parts of his revenue duties. The rule may be so worded as to give effect to these instructions. " 16.

11. The Revenue Commissioner, Southern Division, and Superintendents, Revenue Survey, are in possession of the views of Government as regards the felling and cultivation of trees, and the rule on the subject should therefore be worded so as to give effect to those views. " 19.

12. The amendment proposed by Lieut. G. S. A. Anderson, of Rule 16, approved. " 20.

13. The remaining paragraphs of the letter from the Revenue Commissioner, Southern Division, do not appear to require any particular notice.

14. The Superintendent, Revenue Survey, Southern Maratha Country, should be furnished with copy of the Revenue Commissioner's letter and its accompaniments and of the Government reply, as also with transcript of the joint Report, which last document he should be requested to prepare for the press, by making such alterations in the body of the paper, and adding such foot-notes as will show how the rules stand and are to be acted on according to the modifications we have enjoined.

15. When the English version has been printed, Kanarese and Marathi translations of the rules should be prepared and lithographed, as recommended by Captain Wingate in paragraph 32 of his letter of the 23rd December last, No. 239.

FALKLAND

J. P. WILLOUGHBY

20th October 1849. D. A. BLANE.

No. 6 of 1850.

From

G. WINGATE, Esq.,

Superintendent, Revenue Survey and Assessment,
Southern Maratha Country;

To

H. E. GOLDSMID, Esq.,

Secretary to Government, Bombay.

Sir,

In compliance with the instructions contained in your letter of 16th November last, No. 6901, I have the honour to return the joint Report therewith forwarded, to which I have made such alterations and added such foot-notes as appear to me sufficient to show how the rules for the future management of surveyed districts stand, and are to be acted on, according to the modifications Government has enjoined. The alterations and additions made will be understood from the following explanations.

2. No change has been made in the body of the Report, except in the case of the rules following paragraph 84; but a note has been added to paragraph 83 to give effect to the instructions contained in paragraph 11 of the Government letter No. 6900 above quoted.

3. The sanctions for the rules, as they now stand, are quoted in the margin, and remarks by Government qualifying them in application are given in foot-notes.

4. In Rule 2 I have added the sentence "but in case of valuable fruit and other trees standing in fields" the words "assessed at dry-crop rates," which appear to me necessary to prevent misconception, as the fruit of waste gardens is often sold by auction; but as garden fields pay the higher assessment of irrigated land, it was not intended that a cultivator, agreeing to bring them again into cultivation and pay this assessment, should have to purchase the trees in addition. I have also added, in a subsequent part of the same rule, the words "offered at a fair upset price," to show that the rule does not enjoin a peremptory sale of trees, when a fair price cannot be obtained for them. I have also added a foot-note to explain that this rule does not apply to fields specially reserved for the growth or preservation of trees. These additions have not been expressly enjoined by Government, but are, I believe, in accordance with its views, and will, I trust, be approved of.

5. Rules 4 and 5 have been amended, as enjoined by Government.

6. Rules 10 and 11 have been altered, and will, I hope, now be considered in consonance with the views of Government referred to in the 12th paragraph of your letter No. 6900. These rules might perhaps with advantage be divided; but for the sake of facilitating reference, I have thought it better to adhere to the numbering of the rules given in the original Report. I have not inserted any preamble to these rules, declaring the right to cut (on application) trees in *gutkool* land, to be "permissive," and not "proprietary," recommended in the 3rd paragraph of Dr. Gibson's letter No. 226, dated 17th April 1846, as a chief object of the Survey Rules generally is to convert the tenancy-at-will tenure of the *gutkool* lands into a proprietary and saleable occupancy, and, I think, Government would not desire the insertion of aught that would have a tendency to interfere with the attainment of an end so important. In reference to Dr. Gibson's suggestion in the same letter, to substitute for "a period anterior to the age of the trees," "a term of twenty years," I have thought it best to insert both terms in the rule; for, while the latter is desirable to prevent trouble and dispute regarding the age of old trees which Dr. Gibson apparently had in view, the former is equally necessary to reserve to the holder of a field a right over all trees reared by himself, with which it would be wholly at variance with the spirit of the rules for Government to interfere.

7. Rules 12, 13 and 16 have been amended as required by the Government instructions.

8. I have altered Rule 20 so as to meet the views of the Revenue Commissioner and Government, though I feel it incumbent on me to acknowledge my preference for it as it originally stood. In the new rule I have endeavoured, by requiring the attestation of witnesses to a petition to resign land, and the immediate transmission of the petition to the Mamlatdar or Mahalkari for countersignature, to guard against anyone being deprived of his land through fraud or collusion on the part of the village officers or others. The risk of this is considerable, and will increase if the possession of land becomes more coveted than at present. The objection urged by the Revenue Commissioner in the 10th paragraph of his letter of 10th August last to the original rule, as throwing additional work on officers already overwhelmed by the multiplicity of their duties, is one of great force, and would be conclusive were this invariably the case; but I apprehend that in bringing it forward he had hardly in view the immense reduction of revenue work, required to be done by the District Officers, effected by the survey settlements. In those districts of Dharwar in which the survey has been some years in force, I have myself been assured by the District Officers that they have little revenue business to perform

besides the preparation of the usual routine papers for the Huzur, and that for days and even weeks together they do not receive a petition on the subject of land or revenue. I am of opinion that the revenue duties of Mamlatdars in surveyed districts are even now far from overwhelming, and that they may be expected hereafter, when the village officers are placed on a more efficient footing, to become of very easy performance. I do not, however, urge the re-adoption of the original rule, as the provision of the amended one will, I trust, have the effect of preventing jobbing in the disposal of land on the part of the village officers.

9. I have added a clause to the form of Proclamation in Rule 23 to intimate that wilful injury done to boundary marks is a criminal offence and punishable under Act III of 1846, which, I trust, will be approved of.

10. These are all the alterations and additions made in the rules, with the exception of one or two unimportant verbal amendments which do not appear to require specification.

11. I am not aware whether it is the intention of Government to print the joint Report, as now amended, by itself or along with the rest of the correspondence, but I think the latter plan would be preferable as likely to afford the means of clearing up obscurities and resolving doubts, observed or suggested during a perusal of the Report. And in case of its being resolved to print the correspondence entire, I may here bring to notice with a view to its correction, an important error occurring at the close of the 34th paragraph in all the copies of the Government letter No. 5593 of 1848, which I have seen where the word "prohibited" is used instead of "promoted," by which the sense of the passage is made exactly the opposite of that intended.

I have, etc.,

G. WINGATE,

Superintendent, Revenue Survey and Assessment,
Southern Maratha Country.

Superintendent's Office,
Camp Kolhapur, 7th January 1850.

PART II.

(1) REPORT BY LIEUT. WINGATE AND MR. GOLDSMID, 1840.

(2) REPORT BY LIEUT. WINGATE, 1841.

(1) REPORT BY LIEUT. WINGATE AND MR. GOLDSMID.*

To

JOHN VIBART, Esq.,

Revenue Commissioner, Poona.

Sir,

In compliance with instructions received from you, we have effected a meeting for the purpose of taking into consideration the documents explanatory of the system of settlement being pursued in the North-Western Provinces, received from the Government of India, and tendering our opinions as to the expediency of adopting therefrom any measures calculated to improve the plan of operations for the Survey and Assessment of the Deccan, proceeding under our superintendence. Having given the subject our most attentive consideration, we now beg to submit the following Report.

2. In proceeding to consider the applicability of the plan of settlement, followed in the North-Western Provinces, to the Deccan, we shall, in the first instance, briefly refer to the most important points in which the circumstances of the two countries differ, as the fitness of any public measure must be determined with reference to the usages obtaining in the country where it is proposed for adoption.

3. In the North-Western Provinces, the land tax is assessed upon estates generally comprising many occupancies, instead of upon single fields, as here. An estate may be a single village, or occasionally only part of a village; an aggregation of villages, or parts of villages; and, instead of being simply the property of one individual, is almost invariably that of many proprietors, who are jointly responsible for the payment of the land tax, which is assessed on the estate in the lump. In the Deccan, on the contrary, the existing divisions of land are usually fields of moderate size, capable of being conveniently cultivated by one person; these divisions have been preserved in our settlement, and the land tax fixed independently upon each. An estate, therefore, in the North-Western acceptation of the term, may comprise one or many of such fields, and be the property of one or many persons, the chief distinction of the two being the difference of size in the division of land upon which the tax is fixed. The assessment, however, in the Deccan has not been fixed upon fields, in consequence of the non-existence of estates; for there are divisions of land, held by brotherhoods of Mirasdars or proprietors, which seem to correspond very nearly with the mahals of the North-Western Provinces; nor from the absence of mouzahs, for the whole country is apportioned into villages which, however, differ from those of the North-Western Provinces, in their greater size, and in comprising within their limits not one or few, but numerous estates, having actual possessors, under the denomination of Mirasdars, or which, from the extinction of the original proprietors, have lapsed to Government, or become "gutkul," but are still known by distinctive appellations.

4. We do not feel ourselves competent to canvass the North-Western system, with reference to the country where it is found; but it appears imperative to show that the objections preferred by the Sadar Board of Revenue against the Madras ryotwar settlements, in their letter dated 20th March 1838, to the address of the Officiating Secretary to the Right Honourable the Governor-General, are in no wise applicable to the system now pursued in the Deccan, and at the same time briefly to take notice of the chief advantages brought forward by the Board as distinctive of the North-Western system, but which we believe to be equally secured by ours; and in doing so, we shall take up the subjects in the order observed by the Board.

I.—WITH REFERENCE TO THE SIZE AND NATURE OF THE ESTATES, AND THE MEANS TAKEN TO EFFECT A SURVEY OF THEM.

5. It is objected by the Board to the Madras system, that the survey is confined to "a few estates scattered over the face of the country, which have been created and assigned to certain individuals." With us no estates have been created or disturbed. Such as existed, exist still, and here, equally as in the North-Western Provinces, a whole district is divided into villages; each of these villages has its known boundaries; the position, extent, and capabilities of each village have been determined and recorded. We have further an accurate record of the extent, capability, and position of each field or number within the village, and though we have no scientific delineation of the boundaries of villages, we have yet maps showing the relative position of fields, rivers, roads, sites of buildings, wastes, etc., prepared with care by natives, under the superintendence of European officers, which we believe sufficient for all useful purposes, and certainly, judging from the papers before us, much superior to the Khusreh map of the North-Western Provinces. An estate, or holding,

* Vide *The Joint Report*, p. 3.

may consist of one or more fields, and be held, as in the North-Western Provinces, in severalty or by many co-parceners, under joint responsibility, but the circumstances of the assessment being fixed upon fields instead of estates, and of no portions of different estates being included within one field, renders any further apportionment or allotment of the tax unnecessary, and admits of the freest transfer of property, whether by judicial process or private agreement.

6. It is stated by the Board that in Madras "the extension of cultivation without a corresponding increase of demand is strictly interdicted," but "that in the North-Western Provinces each village, and consequently each estate, contains a quantity of waste and culturable land, and the proprietor, during the period of the settlement, is entitled to the whole profits of all he can make out of this land without any increased demand, although the amount of waste land has generally some considerable influence upon the Collector in settling his jumma." The case here is the same as in Madras, but it is most certain that this has not been found to oppose any obstacles to the extension of cultivation. On the contrary, as has already been brought to the notice of Government, in all districts of the Deccan yet settled by us, cultivation has increased with unexampled rapidity, so much so, as to give occasion for apprehending it to have extended beyond what the accumulation of capital would warrant, and, at all events, far beyond any previous anticipation. And it may be also argued in favour of this mode of settlement, that by it Government is enabled to fix the jumma of a district, in the prospect of the waste being brought gradually under cultivation, and thus ensure the demand being lightest in the early years of the settlement, which admits of a more rapid accumulation of capital in those years, to be employed in bringing the waste under cultivation, than would be possible with an invariable annual demand, settled at an average of what the district is anticipated to yield during the whole term of the lease.

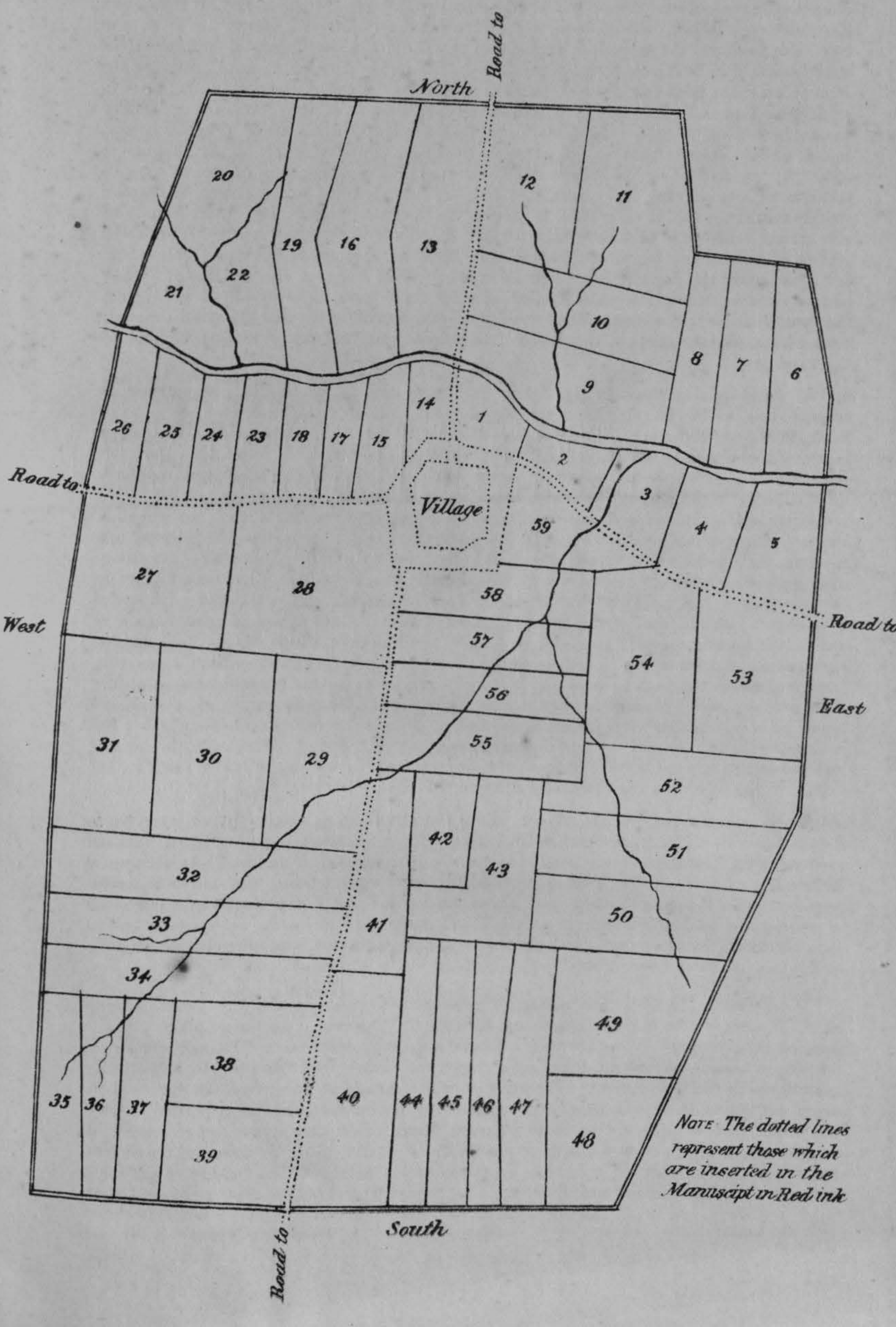
7. In Madras, as stated by the Board, the survey was not checked by any professiona measurement, so that its correctness must have rested more upon the honesty of the measure than the superintendence of European authorities, while the absence of maps is considered an insuperable objection to any survey professing to specify the contents of each field. The latter objection does not apply to the present survey of the Deccan, which is illustrated by village maps superior to the Khusrehs of the North-Western Provinces; and the work of the native measurers is also checked by a professional measurement, by European officers, not, however, by surveying the whole area of a village, but more effectively, it is believed, by selecting and re-surveying a portion of the work of each measurer in every village. The work of our native measurers is performed by means of a cross staff and chain, as we believe has been adopted in the latest surveys in England, where great accuracy in ascertaining the areas of small spaces is an object; and in proof of the accuracy attainable by this description of measurement, as well as of the efficiency of the check kept up by the European officers, we may add that the average amount of error in the Deccan Survey has recently been brought within 2 per cent., further accuracy than which, even if obtainable, would in a practical point of view be useless. The maps have also been laid down of late by our native measurers according to a scale, and admit of being constructed with an extraordinary degree of accuracy, considering that this is done without the aid of instruments for measuring angles. We take the present opportunity to forward, for the inspection of Government, copy of one of these maps for the village of Kumbhari, in the Chandor Taluka of the Nagar Collectorate.

8. It is remarked by the Board "that the Musahat records, prepared according to Regulation VII of 1822, specified many trifling and insignificant peculiarities of soil and produce, which have, however, been subsequently discontinued as useless." At the time of Mr. Pringle's survey of the Deccan there were some very detailed and intricate records prepared, under the name of kaifiats, which we have also found it expedient to do away with as useless, and tending by their great length and complexity to involve in obscurity, rather than elucidate, the subjects of which they treat, and by their very bulk to render the detection of errors a matter of impossibility.*

9. From the 18th to 24th paras. of their letter already quoted, the Board describe Sir T. Munro's system of classification and assessment, and give it as their opinion "that a detailed classification such as his would, if made with tolerable accuracy, be sufficient for the purpose of assessment and the future management of estates, where property in land attaches exclusively to the Government, no parties existing intermediately between the State and the actual cultivators of the soil, who have a right to regulate rents and enjoy a portion of them, but would not be adequate to those purposes where proprietary rights are recognized as attaching to individuals, and a title to change the rent of fields or to disregard the customs by which the amount of them has always been regulated, at the pleasure of the ruling authority, is neither claimed nor asserted." As proprietary rights are fully recognized under

* The kaifiats prepared for many of the villages assessed by Mr. Pringle were upwards of 300 yards in length.

To face page 52.



our settlement, and the Board's objections, if applicable to Sir T. Munro's system, are equally so to ours, we deem it incumbent to state our reasons for believing the Board to have arrived at a mistaken conclusion upon this important point. It appears to us that a proprietary right in land can only be destroyed by the imposition of an assessment so heavy as to absorb the whole of the rent, for as long as the assessment falls in any degree short of the rent, the portion remaining will give a value to the land, and enable its possessor to let or sell it, which of necessity constitutes him a proprietor. Whether or not Sir T. Munro disregarded the rights of the real proprietors, and recorded the land simply in the names of the actual occupants, who thus became responsible for the payment of the assessment, we do not think it necessary to inquire; but we unhesitatingly record that our settlement recognizes all existing proprietary rights and that the proprietor has the fullest liberty to assign his lands to under-tenants upon whatever terms he chooses, and which right is everywhere exercised. The imposition of a land tax upon every field in England would no more destroy proprietary rights than the existence of tithes does at the present moment; and it is the amount, not the mode of assessment, that could by possibility do this. An assessment in excess of the rent would destroy proprietary rights in the North-Western Provinces equally as in Madras, while one less than it would preserve, or constitute them alike in both countries. If, therefore, the value of land or property in land has been destroyed in Madras, the cause is to be sought for in the exorbitancy of the assessments, not in the mode of its imposition.

10. The Board also allege that Sir T. Munro's classification was greatly vitiated by fraud, and further, "the details enjoined were so minute that their successful accomplishment, even by men of the most upright intentions, was impossible." With the correctness or otherwise of former classifications we have little to do, but may state our opinion, that any classification performed by natives of this country, unless subject to regular and rigid test by European officers, would prove incorrect. We have not the means of determining whether or not the details of Sir T. Munro's classification were so minute as to render it impossible for men of upright intention to accomplish it successfully; but we feel assured that the system of classification followed here is capable of being, and has been, executed with a degree of correctness sufficient for all practical purposes.

11. There being in all countries a regular gradation in the value of soils, from those of the highest to the lowest fertility, the most natural mode of classification would appear to be to divide this gradation into a certain number of classes, which might be more or less numerous, according to the value of the land in the country to be classified, and the consequent difference in the amount of assessment that would be occasioned by referring a particular soil to one or other of two adjoining classes. We have adopted, for the portion of the Deccan to which our operations have as yet extended, nine classes or gradations, to one of which every peculiarity of soil has been referred; and these we have reason for believing to be sufficiently numerous. The relative value of the various peculiarities of soil is in every country intimately known to the agricultural classes engaged in their tillage, and this knowledge, especially in India, where the application of capital to, and its consequent effect on, the natural value of land, is so limited, may be acquired by a native agency, if not already familiar, and also by the European officers, whose duty it is personally to superintend the execution of the classification. Should any doubt be entertained of this, it will, we think, be at once removed by the evidence we shall presently have to adduce of its successful accomplishment.

12. Before the value of any field, or other portion of land can be ascertained, it is, of course, necessary to know what descriptions of soil, and what proportions of each, exist within it; and for this purpose, the classifier, upon our system, minutely examines the field, digging at intervals over its whole surface, to ascertain the depth and quantity of the soil, as well as the nature of the sub-soil. From this examination he is enabled to assign the several varieties of soil in their proper proportions, to one or more of the nine classes above referred to, which particulars he records in his field book, with other extraneous circumstances, should there be such, affecting the value of the field. From this return, we are at once enabled to ascertain the average quality of the soil as well as the relative value of any field.

13. A proportion of these returns is subsequently subjected to test by the European officer, who, in company with another classifier, unacquainted with the classification already made and recorded, goes again over the same ground, and these make their independent classification of its soils. Should their results correspond, the accuracy of the test is established, and the correctness or otherwise of the original classification is ascertained from its comparison with the test; and as this duty of accompanying the officer is not confined to one, but devolves in turn, on every native classifier, it is evident that the nature of this check tends to produce uniformity of classification, by bringing the opinion of each classifier into immediate contrast with that of his fellows, and of the officer himself, and so enabling the latter at once to detect and remedy any deviations from the general standard. This test is systematic, and extends to every village; while we, at the

same time, endeavour to make it return as frequently as possible to the work of every classifier, and take care that it should never be allowed to fall much in arrear. The proper execution of this test is deemed the principal duty of the Survey Officers, as a slight error in the classification affects the amount of assessment, more than a gross error of measurement.

14. Our classification requires not only a good eye and judgment to distinguish between the different gradations of soil, but also tact in estimating the proportions of each, in the field under inspection; and to the difficulty of this latter operation may be referred most of the errors brought to light by our system of check. We find, however, that such accuracy has been attained as to reduce the errors arising from all sources so much that the total error in a whole field rarely amounts to the difference between the value of two contiguous classes, and as we have nine of these, it is evident that such an error is inconsiderable, and cannot possibly vitiate the work; and the object of classification being to ascertain the relative values of different portions of land, this will be sufficiently attained for practical purposes when the resulting assessment is found not to interfere with cultivation, and where the waste lands of a district are uniformly brought under tillage, without any greater anxiety to obtain or shun particular fields, being observable, than can be accounted for on considerations independent of the assessment.* And that this is the case here we can abundantly prove, for in every district, and not in every district merely, but in every village, whatever its peculiarities of soil or situation, having any considerable portion of arable waste at the time of settlement, a marked extension of cultivation has *subsequently* taken place.

II.—Basis of Assessment.

15. It is unnecessary to refer particularly to the Board's description of the Madras mode of fixing the assessment, the Government demand here, as well as in the North-Western Provinces, never having been assumed at any portion of the gross produce. From the directions for arriving at the fair amount of Government demand, laid down in the Board's settlement circular of the 9th April 1839, it would appear that there is in reality no material difference between their and our mode of fixing this amount. Our method of proceeding will generally agree with that described in the 81st, 82nd, and 83rd paragraphs of the above-quoted circular, the present condition of the agricultural classes, the state of particular villages, the amount of the Government realizations, the prices of produce, and similar considerations, compared with those of preceding years, affording us the chief ground work for determining satisfactorily what abatement or addition should be made to the existing Jumma. We also, by a similar process, arrive at an opinion of what the rates of the different soils should be, and by applying these to the ascertained area and classification, we find what amount of Jumma these rates will produce, and by examining whether this is as much in abatement, or excess, of the existing Jumma, as our previously formed opinion had led us to think necessary, we are enabled to correct our first estimate of the appropriate amount of Jumma, and thereby finally settle our rates. This is in effect, as we understand it, the North-Western system, with little modification.

16. In the North-Western Provinces further modifications have been made in the assessment of particular estates, in order to accommodate the present settlement to that previously existing, and which appear to have been rendered necessary by the marked difference of industry and agricultural skill in the various communities of proprietors and cultivators located in the different villages. The Board regret the existence of such a necessity, and it has been their object to equalize, as far as possible, the Government demand. Here, however, such marked distinctions in the several classes of cultivators are not observable, and have never been recognized as a reason for exemption from assessment. The modifications in question are, therefore, happily unnecessary, and all villages possessing equal advantages of position, water, soil, and climate, have been assessed alike.

Vide 92nd para. of Sadar Board's Revenue Circular dated 9th April 1839.

17. From the difficulty of ascertaining the true rent of different descriptions of land, we have not assumed any theoretical proportion of this for the standard of our assessment; but we fully coincide in the justice of the principle of limiting the Government demand to a portion of the *true rent*, and believe 50 to 80 per cent. thereof, as laid down by the Board, would form a liberal assessment, and that this principle, if capable of being carried into practice, would prove an invaluable blessing to the agricultural classes of India, and introduce a new era in their history. And we further ascribe to the fact of a portion of the rent having been seldom, if ever, left to the proprietor or cultivator in India, the characteristic wretchedness of its agricultural population, rather than to any peculiarities marking its different system of revenue management.

III.—Waste Lands.

18. We have already, in paragraph 6th of this letter, made some remarks upon waste lands, but we may here take occasion to record our belief, that the absence of any extension of cultivation in the Madras districts, brought to notice by the Board under this division of the subject, was not a consequence of the waste being assessed, but of both it and the

* In choosing a field a ryot does not look to the assessment alone but also to the convenience of its position with reference to the rest of the farm, and many other evident considerations which it is needless to particularize.

cultivated land being over-assessed. Kowls may be necessary under over-assessment to prevent a rapid diminution of cultivation, as by their means the cultivator is enabled to pay from the produce of his kowli land the full rates of assessment upon the rest of his holding, which would otherwise be impossible, and wherever they exist, there we should at once expect to find over-assessment.

Vide paras. 48 to 66 of Board's letter dated 20th March 1838 (No. 102).

19. Under a fair and equitable assessment, we think kowls not only unnecessary, but injurious; for their inevitable effect is to stimulate the cultivator to engage for more land than he has the means of profitably cultivating, and by so doing, to retard the agricultural advancement of the country in which they obtain. We have already stated that in the districts settled by us, cultivation is rapidly extending, without any adventitious aid whatever, as we believe would be the case anywhere under a liberal assessment; and we therefore think it unnecessary to offer any further observations on this head.

IV.—Mode of Settlement.

20. The mode of annual settlements described by the Board as existing in the Madras Districts, does not differ materially from that hitherto followed in the Deccan. The complexity and detail observable in this, however, are almost wholly due to over-assessment, and to the absence of any uniform and simple system of accounts; this important part of revenue management having hitherto been left to the discretion of the Collector, or his native establishments for the time being.

Vide paras. 57 to 61 of Board's letter last quoted.

21. The tour made by the Mamlatdar and his establishments, for the purpose of taking engagements from the cultivators, and ascertaining what lands they wish to give up, or take, in addition to their previous holdings, is not only unnecessary, but highly prejudicial. It is sufficient for Government to know what lands are actually under cultivation in each year; and this information may be fully obtained by one annual field inspection, conducted by the village officers in concert with a karkun from the district establishment. The correctness of this return could be tested with facility, by the Mamlatdar and his chief karkun as well as by the Collector, his assistants, or trustworthy members of their establishments, deputed for the purpose; and this duty, even now, though capable of being greatly simplified, is executed with exactness, in proof of which we may mention that in the whole course of our duties as Superintendents of Survey and Assistant Collectors, which have entailed a most extensive examination of the lands of villages, we have only met in the Deccan with some six or seven instances of concealed cultivation. Some instances of one cultivated field being entered in the accounts in the place of another, have indeed been noticed, but the introduction of maps under the new settlement will prevent the occurrence of such errors. From this annual inspection of fields, the village accountant frames an Asamiwar Statement, from which the Mamlatdar makes an abstract for each village, and from these again one for his whole district, and these comprise everything requisite for the completion of a ryotwar Jamabundi.

22. The revenue is collected by the village officers, and paid into the Mamlatdar's treasury by regular instalments of so many annas in each rupee; and to prevent fraud on the part of the Government officers, every ryot is furnished with a receipt book, in which his payments are required to be immediately noted by the village accountant, and signed by him and by the Patel. The same operation is repeated in the day-book and ledger of the accountant, and in like manner the revenue due from each village; and all payments on account thereof are entered in the books of the Mamlatdar. So effectively does this plan work, that frauds of any description have become, as you are well aware, matters of rare occurrence.

23. The variations of the annual demands in Madras are attributed by the Board to six causes; but in districts where our settlements have been introduced, such variations are limited to two, viz.:—

Vide 58th para. of Board's letter of 20th March 1838.

I.—An increase or diminution of the quantity of land in cultivation.

II.—Remissions on account of failure of crops, or poverty of ryots.

24. The first is essential to our system, and we hold it to be one of its greatest advantages, as leaving the ryot at perfect liberty to enlarge or contract his cultivation, as his individual circumstances may render expedient.

25. The second must, we apprehend, be to a greater or less extent attendant upon any settlement in India, where seasons are so very uncertain, and general failures of the harvest by no means unfrequent. Under the new settlements here, remissions have already become quite inconsiderable, and we have reason for believing that in a very few years more, as the circumstances of the cultivators improve, they ought in ordinary seasons to be little more than nominal.

V.—Balances of Revenue.

26. Upon this head we have merely to record our impression, that no balances on account of land revenue, contracted subsequent to the new settlement, exist in any of the revised districts, nor do we apprehend the slightest danger of such hereafter accumulating under the most ordinary exercise of care on the part of the Collector.

Vide paras. 63 to 66 of Board's letter of 20th March 1838.

VI.—Average Rate of Assessment.

Vide paras. 67 to 70 of Board's letter of 20th March 1838.

27. We forbear offering any remarks upon this division of the subject under a belief that no useful conclusion can be derived from its discussion, without an intimate acquaintance with the various capabilities of the countries brought under comparison.

VII.—Saleable Value of Land.

Paras. 71 to 79 of Board's letter of 20th March of 1838.

28. Owing to the racking system prevalent in the latter years of the Peishwa's Government, and over-assessment throughout our administration, sales of land have become as little known in the Deccan as in Madras. Irrigated land, however (which is of inconsiderable extent in the Deccan), has generally retained some small marketable value, and a large proportion of this land is now under mortgage. Notwithstanding this annihilation of the value of land, little revolution of property has taken place, owing to the peculiar nature of the Mirasi tenure, which, until of late years, seems to have prevented it being sold, either in execution of judgment of courts or for arrears of revenue—a fortunate result, in one point of view, as having enabled the ancient proprietors to retain possession of their lands until the present time, when there is every prospect of their acquiring a considerable value. The new settlements have nowhere been in operation for a sufficient period to admit of any certain or general conclusions being drawn regarding their effect on the value of land; but the eagerness of Mirasdars to become re-possessed of such portions of their estates as have fallen into the hands of others, and the competition of different cultivators for portions of waste, would seem to indicate that all descriptions of land are rapidly acquiring a value; and we have little doubt but that in the course of a few years they will become saleable with the same facility as other descriptions of property.

VIII.—Expenses of Collections.

Vide paras. 80 to 89 of Board's letter of 20th March 1838.

29. The Board discuss at some length this question, but more with the view of disproving the vast superiority that has been claimed for the ryotwar over the village plan of settlement on the score of economy, than of deciding absolutely as to the expense of the two systems. We see nothing to be gained by the continuance of this discussion, which would also require more detailed information than is in our possession, and can hardly, in our opinion, be considered a practical question with reference to this part of the country, where great part of the expense of collection is made up of land and shares of the Jumma, alienated to hereditary district and village officers, which are vested rights, and could not be got rid of under any system.

IX.—Dependence on Native Functionaries.

Vide paras. 90 to 105 of Board's letter of 20th March 1838.

30. We fully concur with the Board in ascribing the prevalence of fraud in the Madras Districts to the peculiarities of the system of management there followed, which offer so many opportunities for extortion and peculation, as, in our opinion, to render their prevention impossible by the most active vigilance and care on the part of the European authorities: and we also believe that the aid of informers, and the enmity of one man to another, relied upon by the Madras Collectors as some check upon the evils of their system, are as little to be trusted to for the protection of the interest of the cultivators and Government, as they are certainly calculated to arouse the worst passions of our nature, demoralize the native community, and bring the European character into disrepute.

Vide 90th para. of Board's letter of 20th March 1838.

31. The Board justly observe that, "in addition to the sources of peculation arising out of the collections of a fixed demand, which exist equally in the North-Western Provinces and in the Madras District, there are in the latter all the opportunities arising out of a fluctuating demand;" an objection, however, which does not apply to the system here, where the demand during the period of the settlement is as certain and invariable as in the North-Western Provinces; that is to say, that the person who engages for the cultivation of any number of fields is perfectly aware beforehand of the amount of assessment he will have to pay in consequence, while he has the most perfect liberty to cultivate them in what manner, to raise what crops, and to effect what improvements he pleases, without the amount of his annual payments being thereby in any way affected; and we apprehend this constitute a degree of security and certainty as perfect as can be wished for. With us, the Collector has no power to modify the demand as fixed upon each field for the term of the settlement, except when abatements are required in particular instances on account of failure of crops; but such, as we have already stated, will become less and less necessary, by perseverance in moderate assessment, and the improvement in the circumstances of the proprietors that will thereby be occasioned. Practically speaking, the amount of these remissions has become so trifling in the districts settled by us as to leave very little opening for fraud or collusion.

32. One great advantage of a fixed field assessment is the freedom and independence it secures to every proprietor or cultivator within the village, by the safeguard it offers against oppression or over-exaction on the part of our Revenue Officers or other influential persons; for (with a full knowledge of the prevalence of abuses in former years) we conceive it hardly possible, now that a Deccan ryot should not know the amount of assessment on the fields he holds in cultivation, or should submit to pay more without immediately bringing the grievance to the notice of the Mamlatdar, Mahalkari, or European authority.*

33. In the North-Western Provinces, owing to the greater size of the portions of land on which the assessment is fixed, these advantages must necessarily, in our opinion, be less. With us, if the field be the property of one person, he can be in no doubt as to the sum he has to pay, and he cannot be obliged to pay more than is due by the oppression or defalcation of his neighbours, while, if it be the property of more than one, yet the number of the co-parceners must be small, and the intricacy of the relations constituting their dependence upon each other, and their consequent liability to injury from one or more of their body, proportionably less, as our fields are smaller than the Mahals or estates of the North-Western Provinces. And we cannot but think that the number and complexity of interests involved in making up the demand payable on these estates, must give opportunity for much oppression on the part of the richer and more influential members towards the poorer and feebler portion of the community, and this opinion is confirmed by the statement of the vast number of cases connected with land brought before the courts for adjudication, subsequent to the introduction of the present settlement, and also by other parts of the correspondence before us. Mr. Thomason, indeed, states in the 49th paragraph of his Report on Azimgarh, that "a wealthy and intriguing man, who once gets a footing in a village, will soon contrive to bring the interests of all the others to sale, and, by purchasing them, become himself the sole proprietor," and this extended system of compulsory joint responsibility would also appear to be unfavourable to industry and agricultural improvement, which, in common with other sources of national prosperity, will generally flourish in proportion to the degree in which the efforts of individuals working for their own advantage are left unshackled.

Vide 102nd para. of Mr. Thomason's Report on the Settlement of Azimgarh.

34. The existence of proprietary rights in the Madras Districts, argued for at some length by the Board, has, we are told, been denied or doubted, and we can understand the feeling of surprise with which such assertions must have been received; for, however the value of this right may have been affected by taxation, it is difficult to imagine over-assessment to date from a period as remote, and to have been so unvarying in its nature, as to have prevented this right ever rising into existence, or when once risen, to have continued so long as not only to have destroyed its value, but obliterated its very remembrance.

Vide paras. 106 to 120 of Board's letter of 20th March 1838.

35. But the Board would seem further to infer that this right existed in the form of joint proprietorship, as corporations, communities, municipalities, republics; and for this opinion, in particular instances, there are probably sufficient historical grounds; but such tenures, where involving a common ownership and participation of liabilities and advantages, appear to us in opposition to nature, and such as could only be called into existence by the force of peculiar circumstances.

36. In the ordinary course of affairs, men naturally desire to separate their interests as much as is possible. It is inconvenient even for brothers to possess the same bullocks, the same plough, the same fields, and the same house. The joint management and responsibility instituted by the Jesuits in Paraguay was productive of the worst results. Under such a tenure, the industrious find that they are working for the idle, and the idle never feel the spur of want to urge them to exertion, and these inconveniences have been so severely felt as to have occasioned a separation of interest, and rendered individual proprietorship general in every civilized country. If allowed the freedom of choice, six persons would, we apprehend, divide an estate into six parts, rather than hold it in common. The joint owners of 1,000 guineas would not long keep them in a common purse. A family of brothers would soon cease to live in the same room, and though the reverse of this might hold good for a single generation, it is impossible to imagine it continuing through a long course of ages.

37. We would not be misunderstood, however, as asserting that a common agreement for the purposes of Government is unnatural or uncommon; but we mean to say that a combination of interest for the purpose of dividing the profits of an estate, where this is found to exist, is unnatural, although we fully agree with the Board in thinking that the inhabitants of every village usually made their own arrangements, and were jointly responsible for the payment of the Government assessment in olden times. We do not, however, infer from this the existence

* By the appointment of Mahalkaris, the kutcherry of a head Native Revenue and Police Officer has been brought within a day's journey of every village; and you are well aware that the avenues of redress thus opened up to the ryot are fully equal to the occasion, and that cases of oppression or over-exaction on the part of the village officers have become as rare as they were once common, while the checks established upon the conduct of the Mamlatdars and Mahalkaris, added to the confidence acquired by the cultivators in their ability to obtain redress from the European authorities, render it almost impossible for the former to stifle complaints, or at least much too dangerous to attempt under any but most extraordinary temptation.

of a common property in the village lands, or the joint ownership we are told is so common in the North-Western Provinces. Joint responsibility for the payment of the revenue and joint village management were, perhaps, universal in the Deccan, but we can find no traces of joint ownership, and must believe that it never existed. The villages here are much larger than those of the North-Western Provinces, but generally contain a number of Thals or Tickas, about the size of the Mahals or estates of the latter, which, though divided off into distinct fields are commonly the property of persons of the same family. Yet in these also we have no hesitation in stating our belief that joint ownership did not commonly exist, but we are, at the same time, perfectly satisfied, that with a distinct and recognized division of fields and property, a common responsibility for, and joint payment of, revenue, did at one time, and in fact up to the accession of our rule, exist. Each field of this "Thal" or "Ticka" had its distinct owner; its recognized proprietor, and had also its established rate of assessment, fixed in some cases by Government, and in others by the village community, forming the limit of its owner's liabilities, except in the case of the defalcations of other cultivators, which, in consequence of the revenue being collected from the village in the lump, the community at large was required to make good, and this was generally effected by an extra cess on its several fields or estates in cultivation, in proportion to the amount of their regulated assessment. It is clear, therefore, that this joint responsibility was the act of Government, and resulting from the mode in which its revenues were collected, but is altogether distinct from the question of ownership. Even under this system, however, the utmost care was taken by the community to ensure the proper proportion of the revenue being paid by each cultivator, and it was only in the last resort, when all other means had failed, that any defalcation was made good by a general cess on the lands of the village.

38. The practice of imposing a distinct assessment upon each field, followed in our plan of settlement, is therefore strictly in accordance with ancient custom, but the system of joint payment and responsibility, which is unjust in itself, and could not be permitted without again throwing the mass of cultivators and proprietors into the power of the village officers and more influential members of the community, has been studiously avoided, and by this means every man's liabilities have been confined to his own concerns.

General Remarks.

Vide paras. 123 to 141 of Board's letter of 20th March 1838.

39. The Board conclude their letter with a lengthened and impressive summary of the evils deemed by them inherent in the ryotwar system, as evidenced by the wretched state of the Madras Districts, which they contrast with the flourishing condition of the North-Western Provinces under the present settlement, and thence deduce the immeasurable superiority of the village plan of management; but, in our humble opinion, the immeasurable superiority observable in the North-Western Provinces is the result of the moderation of the Government demand: the undeniable inferiority in the Madras management arises from the error committed, of imposing exorbitant and illiberal assessments.

Vide 123rd, 124th and 126th paras. of Board's letter of 20th March 1838.

40. Many of the remarks made by the Board on the evils of the ryotwar system appear to us to be true, and true only of over-taxation, whatever the system with which it is connected. And in characterizing any system where over-taxation has prevailed, we would say with the Board that "it is found in connection with the lowest state of pauperism and dependence. It cannot be said to be preservative of Indian tenures—where it exists there can be no leases to uphold, and a possessory right will not be even claimed. That any system, when over-taxation exists, can be dear to the people, can only be believed when men feel a pleasure in seeing their dearest possessions torn from them to be given to others, and unless men are found indifferent about the occupancy of fields, on which they have bestowed their labours in previous years, being at all times ready to change from one field to another, as the assessment suits their fancy or convenience; and under such a system there must always be necessity for Government interference, and the surveillance of Government inquisitors." "Every man must be degraded in his own opinion, and relegated to a state of perpetual pupilage. The honest, manly bearing of one accustomed to rely on his own exertions can never be his—he can never show forth the erect and dignified independence of a man indifferent to the favour or frown of his superior, accustomed as he must be to prefer perpetual remonstrances and solicitations, and abide the result with the most enduring patience. His earnings, while his rent continues more than he can pay, are limited by the will of some meddling speculator; if they are brought to light, he must pay for his industry; if they are concealed, he must pay for the collusion."

Vide 138th para. of Board's letter of 20th March 1838.

41. All of these remarks are clearly applicable to over-taxation, although brought forward in proof of the evils of a ryotwar settlement; and that over-taxation, to a ruinous extent, has existed in Madras, the Board themselves supply us with sufficient proof, when they state that in Coimbatoor the average annual settlement for the last ten years is about one-third, or 11,62,463

below the maximum demand; and that in Kanara, in 1243 Fasli, out of 51,449 vergs, only 31,835 paid the maximum, and in 20,164 vergs, temporary or permanent deductions were allowed; and the Board truly observe, that "under such circumstances, however the cultivators may exert themselves, the hope that by their industry they may attain the standard assessment, and thereby reach a limit to the Government demand, is absolutely vain; thence must result inaction, poverty, dejection, and all the worst concomitants of oppressive over-assessment."

Vide 139th para. of Board's letter of 20th March 1838.

42. The North-Western Provinces, from the Reports before us, would appear to be naturally very productive, and to have had the benefit of a generally moderate assessment throughout the term of our administration. Enjoying also the security afforded by the stability of the British Government, it is not to be wondered at that they should have greatly improved in this period, and it can hardly be doubted that they will continue to do so, while this liberal management, which has been confirmed and prolonged by the new settlement, continues. In Madras, on the other hand, by a long course of previous oppression and misrule, the country had become greatly impoverished when the roytwar settlements were introduced, and these last were unhappily fixed to an amount so oppressive as to render their realization impossible, and give occasion for annual abatements, at the discretion of the Collector. This proved, as might have been expected, the source of fraud, villainy, and oppressions, to an almost unparaleled extent, and also gave occasion to the vast and almost interminable details of the accounts, the minute investigation into the concerns and the means of the cultivators, and the tyrannies and oppressions of the Government officials, so much deprecated by the Board; but all which evils, it appears to us, might be as easily avoided in a ryotwar settlement as in any other.

43. When the Board shall have proved that a ryotwar settlement is necessarily accompanied by over-taxation, and that moderation of demand is impracticable in connection with it, then, and not till then, shall we be prepared to admit the justice of their remarks in condemnation of this plan of settlement. For it appears to us that moderation and certainty of assessment, security of property and proprietary rights, long leases, and whatever is necessary to the well-being of a country, are as attainable without a village settlement as with it, and that their free working and beneficial effects must be impeded rather than advanced by a forced system of joint ownership and joint responsibility.

44. We further believe many most important elements of national prosperity to be secured by the plan of settlement now being followed in the Deccan, among which may be enumerated, a moderate and equal assessment, leaving a portion of the rent with the proprietor or holder; the settlement confirmed for thirty years; security against increase of demands, on any account whatever, during the term of the settlement; the consequent accruement of all benefits arising from improvements to those who make them; limitation of joint responsibility to a few cases where fields are held in common, or have been sub-divided by co-parceners; recognition of property in the soil; and perfect freedom of management with regard to rent from sub-tenants, and sale, secured to its owners; facilities for effecting sales or transfers of land afforded, by the apportionment of the assessment on fields or such limited portions of land as would, in the circumstances of the proprietors of this country, be naturally made the subject of such transfers; collection of the assessment from cultivated land only, and thus permitting the ryot to contract and extend the sphere of his labours according to the means at his immediate command—a privilege of immense importance in a country where the capital of the agriculturist is not only small in itself, but subject to great fluctuation, from the effect of variation in the seasons.

45. Such are some of the advantages of the system; and although our views of human nature are not sufficiently favourable to permit our indulging in expectations so fair and promising as those portrayed by the Board in their pleasing picture of the anticipated effects of the village system of the North-Western Provinces, where families will be united by the closest bonds of concord and sympathy—where the poor will be supported by the affluent, and widows and orphans encouraged to look for protection from their natural supporters—we yet expect that our settlements will confer real and substantial benefits upon the people, and augment, at the same time, the resources of the State.

Vide 135th para. of Board's letter of 20th March 1838.

46. We trust by the preceding observations to have successfully vindicated our settlements from the many evils attributed by the Board to those of Madras; and while seeing much to admire in the system upon which the North-Western Provinces are being settled, we do not think that any portion of it could be advantageously engrafted on our plan of operations here, while, as a whole, it appears quite unsuited to the circumstances of this part of the country. We have here few considerable landed proprietors or other capitalists, who would be willing to engage for the revenue of our large villages under any system calculated to preserve proprietary rights, and prevent oppression on their part; and were the case otherwise we are certain that any attempt to constitute them Zemindars would be viewed with the utmost dissatisfaction and dismay by the whole agricultural community. We shall probably be considered prejudiced judges of our own operations, but as our opportunities of ascertaining the feelings of the people regarding them have been great, we shall venture to assert that our settlements have been

received almost universally with feelings of great satisfaction; and should confirmation of this assertion be needed, we unhesitatingly appeal to the experience of every officer who has been employed in districts where the new settlements are in operation.

47. We have already stated our belief that no part of the North-Western system of operations differing from our own, can be advantageously adopted here; but it will be as well to treat this portion of the subject a little more in detail.

48. We have not the means of ascertaining what degree of accuracy has been attained in the Kusreh, or detailed measurements and maps prepared by the Amins in the North-Western Provinces. A method, however, of verifying the Kusreh is recommended for adoption by the Board in the 66th paragraph of their Circular of the 9th April 1839, but it does not clearly appear from this, or any other parts of the correspondence forwarded for our perusal, that this included a systematic re-measurement of a portion of the Amin's work, and if not, the method would appear unequal to the detection of any but gross instances of his mis-measurement. In our system, every field is subjected to a careful examination during the progress of the classification, to prevent any gross errors of measurement remaining undiscovered, but we place no confidence in this as a means of ensuring accuracy and care on the part of our native measurers, for which we rely wholly on the test of re-measurement made by the European officer, and already described in our 7th paragraph. The ascertainment of the area of the whole village, or even of the cultivated and uncultivated portions from the professional survey forms, we think, no safeguard against fraud on the part of the native measurer, who would in all cases take care that the *total* results of his measurements were not affected by particular deviations from accuracy which he might think his interest required him to make in recording the area of individual fields.

49. The professional survey of the village boundaries, however, is a feature of the North-Western system, to which we have nothing similar here; but we apprehend that the utility of this measure should be considered almost solely with reference to topographical purposes. It seems doubtful whether the information obtainable from such a survey would in practice be found of much use towards the settlement of future disputes, caused by the fraudulent removal of boundary marks; for, in order to render it available, it would be necessary to depute a professional surveyor to the spot, which might not always be possible, and if so, would involve a greater expense than the importance of the land in dispute would generally warrant.

Vide Section II of Sudder Board Revenue Circular of 9th April 1839.

50. Should Government, however, deem it necessary that a professional survey of village limits be instituted, with the view of being applied to topographical and geographical purposes, we are decidedly of opinion that this object would be best attained by means of a separate agency, acting under the instructions of the Surveyor-General. The duties of the officers of the Deccan Surveys are already ample, and the superaddition of a professional survey would necessarily retard the general progress of the work, without proving of any service in settling the assessment, which forms the grand object of our present operations. We consider, also, that the qualifications requisite for the conduct of a professional survey of this kind are quite distinct from those necessary to fit an officer for the superintendence of our present system, and that any attempt to combine the two employments would certainly endanger, if it did not render impracticable, the successful accomplishment of both. The professional survey, in our opinion, could be successfully and economically prosecuted only by a department appointed for the purpose, as in the North-Western Provinces.

51. We have not the means of forming any proper estimate of the cost of such a survey in this part of the country, but from the scarcity of qualified agents, it is probable that, for some years at least, it would be more expensive than that of the North-Western Provinces, notwithstanding the large size of our villages, which may average 3 square miles each. From an extract of a letter from the Secretary to the Board of Revenue, to the address of the Secretary to the Lieutenant-Governor of the North-Western Provinces, and dated 1st September 1837, we learn that up to that period the cost of the professional survey had varied from Rs. 61-4-0 to Rs. 20-10-6 per square mile, but it was anticipated that, under a modification of the system proposed by the Board for adoption, this would be reduced to Rs. 12-8-7¾ per square mile. Whether this reduction of expense has been effected or not, we are not informed; but even on the supposition of the work being executed here at the lowest of the estimates, its cost would be considerable. We have not at command any record of the number of square miles in the Ahmednagar, Poona, and Sholapur Collectorates, in which the survey is now in operation; but you may possibly be able to supply this information from your office, and state what the expense of the work would amount to on the preceding supposition.

52. The demarcation of village boundaries, and the settlement of all existing disputes, are also effected during the progress of the survey in the North-Western Provinces. We fully acknowledge the importance of these measures, but have been hitherto unable to give them effect here, in consequence of the defective provisions of Regulation X, of 1827, of the Bombay Code

which forms the present law on this subject. We hope, however, that a new enactment will shortly be framed, in supersession of the latter, and enable us to effect a permanent settlement of village boundaries.

53. At present, all village boundaries, regarding which no dispute exists, are described, and their position indicated in the village maps. All disputed portions are also measured and mapped as such, leaving the title of the contending parties for future adjudication, by which arrangement the extent and position of all disputed land, as it now exists, is ascertained and recorded, and the occurrence of fresh disputes prevented. In the districts to which our operations have yet extended, with one exception, disputed boundaries are few in number, and not otherwise important, which has prevented the want of means for their final settlement being severely felt.

54. The mode of classifying land followed by us, as well as the accuracy attainable by it, have been already described in our 12th and 13th paragraphs. That of the N.-W. Provinces appears to us to be of much too general and cursory a description to be applicable to a field assessment like ours, where the apportionment of the Jumma on each field is made with reference to its natural fertility and extent, which therefore require to be nicely ascertained. In the North-West Provinces all varieties of soil appear to be referred to three classes, but greater importance is attached to the circumstances of the land being capable of irrigation or not, and to the description of crop grown upon it. But that even these particulars are not always ascertained with accuracy may be gathered from many parts of the correspondence before us, among which may be mentioned the following passages. In the 67th paragraph of the Board's Revenue Circular, an extract of a letter from one of the Settlement Officers is given, and in this it is mentioned that "if not sufficiently bribed, the Amin enters an unduly large number of fields as irrigated, and as consisting of the better descriptions of soil, and an unduly large amount of cultivation of the better sorts of produce. On the other hand, where it suits him, he not only acts on the reverse with respect to these cases, but puts down many fields as uncultivated for many years." And again in the 69th paragraph, "In order to diminish the labour of going over the fields as much as possible, every number of the Kusreh which has been measured as now irrigated, is first marked in the field map with a small cross in red ink. When this is done (which takes little time) a glance at the map will show on which side of the village the great mass of irrigated land is situated. The examining officer then begins first in that quarter, and if he discovers the existence of error, he proceeds to every field which is marked as above described, and records on the spot whether each number is really capable of being watered or not." From this it appears that the classification is not such as to lead the Settlement Officers themselves to anticipate any great accuracy in it, or to place any great dependence on it—an opinion which is borne out by the following extract of Mr. Muir's Report on the settlement of some districts in Bareilly, dated 5th September 1838.

55. In paragraph 21 he states that "the classification of Mouzahs, according to their general capabilities, renders the more uncertain classification of kinds of soil in individual Mouzahs of but secondary importance. The classification of soil in Mouzahs is recorded under the heads of Surraeen and Bhoor, the former including all the land entered in the Kusreh as Doomut and Mutteewar, and the latter only that entered as Bhoor. With a Mouzahwar classification, however much reference to these returns for the purposes of assessment is, in a great measure, dispensed with, I have to observe also that there is an immense difference between a good and a bad Surraeen soil. Thus the unproductive hard soils, called by the people Khaput and Burkhuttee, come under the head of Surraeen, because they are recorded in the Kusreh as Mutteewar, which they really are, although the worst description of Mutteewar. This species of Surraeen, therefore, is of as bad a quality as the poorest Bhoor. Again, there are some kinds of Bhoor approaching to Doomut, which are almost as productive as the best Surraeen. I make these remarks that no misapprehension may occur regarding the kinds of soil recorded in the village forms as they have little to do with the grounds of assessment, which was based on a classification of Mouzahs." We need hardly add that a classification which is not even trusted to for conveying a general idea of the average capabilities of different Mouzahs would be utterly inadequate to determine that of particular fields.

56. The plan followed in the N.-W. Provinces, of fixing the assessment upon each village or estate, chiefly with reference to its actual condition at the time of settlement, must, we think, offer strong inducement to the proprietors to endeavour by collusion with the Amins to have the quantity of land in cultivation, as well as its general quantity, fraudulently underestimated; and what attempts of this kind have been frequently made, and not always unsuccessfully, appears abundantly evident from the papers before us.

57. Frauds of the foregoing description we believe to be hardly practicable under our system of superintendence, but the laxity, to our ideas, observable in the execution of the field measurement and classification of the N.-W. Provinces is perhaps accounted for by the inferior place these operations hold in the general plan of settlement there, compared with the important position they occupy in our system here. Comparatively little use seems to be made of them in fixing the amount of assessment to be levied from each Mouzah or estate; and in addition to the remarks on this point already quoted, we learn from Mr. Elliot's report on some districts

of the Dooab, that "the classification of many villages there was omitted to be recorded through negligence; and that these officers' settlements frequently preceded the preparation of the field measurement and classification altogether;" and these further appear to be of little service in apportioning the Jumma among the several proprietors, sub-tenants, and others having rights in the same village, which is done by the interested parties themselves, and recorded as they agree upon, however much this may be at variance with the estimates of their respective liabilities, obtainable from the Kusreh. Great difference of opinion indeed appears to exist regarding this document; and Mr. Elliot, in the 77th paragraph of his Report above quoted, regards it as the most important of all, although he states having heard that some Collectors have given it as their opinion that the Kusreh is an almost useless document, and this not only where cultivators are tenants-at-will (in which case they may be in a measure justified), but, under other circumstances, where he considers it indispensable.

58. But although no apportionment of the assessment of a village or estate is made on the basis of the measurement and classification of the several holdings or fields composing it, yet this is done according to agreement among the villagers themselves, and the record of this specifies not only the proportion of Jumma to be paid by each proprietor or shareholder, but also the amount leviable from every cultivator entitled to hold land at fixed rates, and the usage of the village with reference to those who are mere tenants-at-will. This statement, which is intended to define and confirm the right of every individual in any way connected with the village, appears to involve not only as minute, but a much more minute inquiry into the private concerns of the ryots than is even attempted under what is usually termed a ryotwar settlement, and we should think it must be difficult in the extreme to draw out such specification of private rights and usages, with any tolerable degree of accuracy. But supposing it done correctly at the time of settlement, what provision can be made for recording the thousand changes by succession, transfer, and sale continually taking place in every community? and if these be not recorded, what relation to existing circumstances will the present survey papers present twenty or even ten years hence?

59. Thus it appears that in reality the assessment of a village is broken down into as small parts, and apportioned on as minute divisions of land in the N.-W. Provinces as with us, and that there a much more minute interference with the management of property is made than here. This interference, we should apprehend, would not only fail of effecting the object of securing the rights of all parties, but might even be made a means of destroying them, and the former, in our opinion, would have been more satisfactory if made according to the ascertained value of the several Puttees, Thakes, and fields forming an estate, instead of by the opinion of the villagers themselves. Here at least we can state from experience, that if the alternative of apportioning the Jumma were offered to a village, all but the most influential inhabitants would instantly decline it, and beg that the duty might be performed by the officers of Government.

60. And in consequence of the apportionment of the Jumma being left to the ryots themselves, it is not probable that much trouble will be taken to inspect the boundaries of fields, and to perpetuate the usefulness of the Kusreh measurements by the preservation of the divisions of land which it records. We do not learn, indeed, from the papers before us, that any provision has been made for this important object, and our impression, from a review of the whole system is, that upon occasion of a future modification of the Government demand, a new survey and classification will be necessary in order to apportion it for the Kusreh measurement and records of the present settlement would no longer give any information of the distribution of landed property, or the rights and liabilities of holder.

61. We have no means of ascertaining how the revenue management of the N.-W. Provinces is now conducted, but from the complexity and variety of tenures and liabilities recorded in the present settlement, we should anticipate that a much closer supervision on the part of the Government would be requisite to ensure its proper working, than in the more simple mode of assessment introduced here; and it is perhaps little in favour of the former, that every necessary adjustment is required to be made through the medium of the civil courts, for, however this may simplify and lessen the work of the Collector's establishments, it seems doubtful whether it will tend in any way to prevent a hurtful and inquisitional interference with the concerns of cultivators, while it can hardly fail to give rise to a litigious spirit throughout all ranks of the people. With us, the possible occasions of doubt and dispute regarding the payment of the assessment are few indeed, being limited to cases where fields are possessed by more than one individual, and of these hardly one would be made the subject of civil action, because capable of easy and satisfactory settlement through the agency of the village or district revenue authorities, to whom the parties interested would naturally, in the first instance, refer it.

62. In conclusion, we would point out the impossibility of instituting a fair comparison between the measurement and classification or other executive details of the system here, and similar operations, as practised in the N.-W. Provinces, apart from the mode of settlement to which they are subservient, for, under different modes of settlement, different degrees of accuracy in measurement and classification, and even different methods of performing these

operations, may be permitted. We have not, therefore, ventured to express our opinions upon any part of N.-W. plan of operations, except with reference to its applicability to this part of India.

63. We have endeavoured, however, throughout this Report to express our conviction that the settlement of the N.-W. Provinces is being made on liberal principles, and our belief that any settlement, based on the principles of moderation, would prove a great blessing to this country, and could hardly, under any attendant peculiarities of system, fail of advancing its prosperity.

64. But while we acknowledge the N.-W. Settlement to possess the first of requisites—liberality, it has other features to which we cannot yield our approval, and we still remain unshaken in our belief of the superiority of a fixed field assessment, as, in our humble judgment, of simpler execution in the first instance, and likely to require fewer adjustment afterwards, as interfering less with the existing tenures on landed property, and offering greater facilities for effecting its sale and transfer, while affording to the poorer and less influential portion of the community a better protection against injustice and oppression.

We have, etc.,

(Signed) H. E. GOLDSMID,

Civil Service.

G. WINGATE, Lieut., Engineers,

Superintendent of Survey and Assessment in the Deccan.

Ahmednagar, 17*th October* 1840.

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(2) REPORT BY LIEUT. WINGATE.

No. 167 of 1840.

To

J. VIBART, Esq.,

Revenue Commissioner, Poona.

Sir,

Mr. Reid's letter to Revenue Commissioner, dated 27th October 1840.
Mr. Halliday's letter to Mr. Reid, dated 17th August 1840, No. 137.
Mr. Colvin's note of 9th August 1840.
Governor-General's despatch to the Hon'ble the Court of Directors, dated 18th August 1838, No. 3.

I have the honour to acknowledge the receipt of copies of correspondence noted in the margin, forwarded with your letter of 5th instant, in which you request me to report whether a system of mapping each village could not be grafted on my present operations, and also furnish a succinct account of the latter, with a description of the actual operations in any one village, as a specimen.

2. The information and opinions here called for have been already in great measure supplied in the joint report lately submitted to you by Mr. Goldsmid and myself, in which our present system of operations is compared, in detail, with that of the North-Western Provinces. To go again over the same ground would be at once a tedious and unnecessary task, and I propose, therefore, in the present communication, to confine my attention to the elucidation of such points arising from the correspondence now under consideration, as have not in the previous report been touched upon or sufficiently explained, and to an attempt to furnish a brief and intelligible account of the process of surveying a single village, which may serve as a specimen of the whole system.

3. Before proceeding further, however, I would direct your attention to several serious misconceptions entertained by the Government of India, in regard to the nature of the operations connected with the Deccan Survey, and which it is the more important to bring forward in this prominent manner, as from them have originated the various objections preferred against the system.

4. Mr. Colvin, throughout his note of the 9th August 1840, rests his arguments on the supposition of the assessment being here fixed on the basis of conjectural estimates and calculations of produce, and similar uncertain grounds, instead of on the safe and practical considerations arising from a constant reference to former regular and easy payments, which he claims as the distinctive character and merit of the system followed in the N.-W. Provinces, and distinguishing it broadly from others. From the adoption of this view he is led to apprehend as an almost necessary consequence of the Deccan Survey the worst of evils, over-assessment.

No assumption, however, could be more unfounded; for the amount of revenue fixed for each district here has, as you are well aware, been determined almost solely with reference to practical considerations, and mainly on a consideration of past realizations; while the unexampled rapidity with which cultivation has everywhere extended, consequent on the introduction of the new settlement, is of itself abundant proof that whatever the objections to which they are open, among them over-assessment can have no place. On the contrary, the survey was instituted for the express purpose of effecting a just and equable reduction of assessment, and the new settlements have been deemed by some to exhibit an uncalled for degree of liberality, but I think without sufficient reason; though, if such were the case, "the loss on this account," as observed by Mr. Colvin, "would be far overbalanced by the prospect of escaping the contrary and greater evil."

5. A further mistake into which this gentleman has fallen is, in believing the assessment here to be fixed upon all the resident ryots or single cultivators in villages. The assessment is fixed upon *fields*, or divisions of land, which have existed in most villages from time immemorial; but without any reference to the circumstance of their being waste, or cultivated by one or several individuals. These fields do not, therefore, materially differ from the Mahals of the N.-W. Provinces, except in being of smaller size, and generally cultivated by, or the property of, one individual.

6. To the foregoing misconceptions regarding the basis of the Deccan settlements may be traced most of the doubts and apprehensions entertained by the Government of India, of their beneficial tendency, but they do not require a detailed elucidation, as this has already been afforded in the report already alluded to.

7. His Lordship the Governor-General in Council has expressed surprise to find in the new Deccan Survey, by which all old errors were to be corrected, that the operations are so conducted as to be absolutely of no value for geographical or topographical purposes, and it is much to be feared of little more than temporary utility even for merely revenue purposes.

8. The latter objection has been already fully discussed and, I trust, satisfactorily disposed of; and with regard to the former, here again a serious misunderstanding of the real circumstances of the case seems to exist. The present Deccan Survey is not a *new survey*, but was instituted for the purpose of revising and correcting, where practicable, Mr. Pringle's operations; and in accordance with this design has the work been carried out. Complete re-measurements of villages have rarely been necessary, and consequently no opportunities offered for the introduction of a more complete and scientific system of survey. The measurements made may be rather likened to the purtalling operations of the Settlement Officer in the North-Western Provinces. The present survey, moreover, was instituted for purely revenue purposes, and the question of rendering it subservient to those of Geography and Topography is now mooted for the first time. It can hardly therefore be in fairness objected to the plan of operations that it does not include the accomplishment of objects that were not contemplated at the time of its formation.

9. I would here beg it to be understood, however, that not one detail of the operations already gone through, or one rupee of the expense incurred, could have been saved by the institution of a circuit survey of village boundaries similar to that of the North-Western Provinces. Everything now done would have been equally required on this supposition, and neither labour nor money has therefore been lost by the omission. If a scientifie survey be considered necessary, it may be as conveniently and economically entered upon now, as it could have been then, for in any case it could afford no materials for fixing the details of a field assessment, and it is therefore immaterial whether it precede or follow the latter operation.

10. I have mentioned that the present Deccan Survey was organized for the purpose of correcting Mr. Pringle's operations, but in the Sholapur Collectorate there are some districts to which the latter did not extend, and which it, therefore, has become necessary to survey *de novo*, and I shall now endeavour to describe the operations followed for this purpose in these last, as being complete in themselves and admitting of a more simple and intelligible description than the methods taken for ascertaining what portions of Mr. Pringle's survey require amendment. The latter, also, would prove of little service towards the determination of the system of survey best suited for general purposes, which is the question now under the consideration of Government.

11. To render intelligible the operations of the Survey, it is necessary to bear in mind that throughout the Deccan the lands of every village are composed of an aggregation of fields generally of moderate size, of which the village accountant has always a record, more or less complete, and according to which the whole of his revenue accounts are drawn out. In surveying any village, therefore, it becomes requisite to ascertain, not merely the area and average quality of its land as a whole, but also the extent, position, and peculiarities of soil, of each of its component fields, whether entered in the accountant's records or not, and likewise the area of wastes, roads, rivers, sites of buildings, etc.; each of these divisions is measured in detail, and the sum of the whole gives the area of the village.

12. The first step taken is to send an order to the village authorities intimating that on a certain day a karkun will arrive at their village for the purpose of effecting its measurement, and directing them to inform every owner of a field of cultivator to have in readiness stones of a certain size to be sunk as land marks by the measurers at each corner or bend of his field during the progress of its measurement. The patel and accountant are also required to be present, and to accompany the measurer daily into the field, with the Bullotehdars, Mahars, etc., of the village, in order to point out the proper boundaries of each field, and fix the boundary marks.

13. A measurer is then appointed to survey the village according to detailed instructions which will be understood from the following description of his operations.

14. For the purpose of recording the particulars of his measurement he is provided with a field book, every page of which is numbered and signed by the European officer, under whom he may be employed. In this book no erasures or obliterations are permitted, any erroneous entry being indicated by a line drawn through it so as to leave the original writing easily legible, and the corrected entry written immediately over it. By this precaution, an entry once made cannot be subsequently altered, so as to prevent discovery, by fraud or collusion. The record of the measurement of each day is also required to be prefaced by a list of the village officers who accompany the karkun to the field, who thus feel themselves made responsible for the accuracy of the boundaries pointed out, while a list of witnesses to the operations of the measurer at every period is also thus preserved.

15. In commencing his survey, the measurer selects a field adjoining the village, usually in front of the principal gate, which he enters in his field book as No. 1, and also the number by which it is known in the village accounts. He then enters its position to the village, with reference to the cardinal points, its name, in what "thal" situated, the name of its owner, if "Miras," waste, or cultivated; if the latter, by whom, and the number of bighas, or other land measures obtaining in the village which it contains. These particulars are obtained from the accountant's records, or, if wanting in these, from an oral examination of the village officers, and owner or cultivator of the field.

16. The measurer then chains the boundary of the field, laying down the land-marks, and making a sketch of its shape in his field book, as he goes round, on which he notes down the number of chains each side is long; the length of the several sides of the field are roughly laid off in his field book from a scale of equal parts, by which he is enabled to make his sketch very nearly in accordance with the actual shape of the field; this he is afterwards enabled to correct, and make to approximate very closely to the truth, for transference to the village map, by a process which will be shortly described. The area of the field is obtained by dividing it into triangles, and measuring the lengths of the bases and perpendiculars, the position of the latter being obtained by means of a cross-staff, and the directions of these various measurements are indicated on the sketch by means of dotted lines. Should there be a well in the field or a road or water-course traverse it, these are also shown upon the sketch. The measurement completed he describes in his field book its situation with reference to adjoining fields, and the points where he has laid down boundary marks. Having completed the measurement of one field he proceeds to the next adjoining, and so on, until he completes his survey of the village; any road or rivers not within the boundaries of the fields are subsequently measured, and the area of the village obtained.

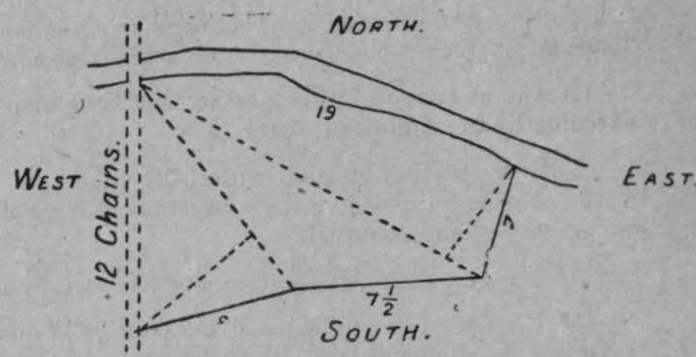
17. The preceding description will be rendered more intelligible by the following example of the method of recording the measurement in the field book:—

Saturday, the 19th of December 1840, and native date.

PRESENT IN THE FIELD.

On the part of Government.	*On the part of the Village*	
Huree Gopal.......Measurer.	Bapoo Wil. Sooltana	Mokuddum P.
Sheik Adam.......Peon.	Huree walad Appa	Patel.
	Bappoo Shreeput	Kulkarni.
	Rama	Lohar.
	Krishna	Purreet.
	Rama	Sonar.
	Balla walad Bappoo	Mahars.
	Ramnak	Mahars.
	Apnac	Mahars.
	Hurree	Mahars.
	Bullee	Mahars.
	Kindoo walad Appa	Mangh.

No. 1. (No. 6 in Kulkarni's Records.)—Situated north of the village, in front of the great gate. The Miras of———, but now cultivated by———. This field is named "Gaon Khoos," being part of Thal "Jadow," and contains 15 Kuddim bighas, according to the village papers.



The length of the bases and perpendiculars shown by the interior dotted lines, and the calculation of the area of the field, are here inserted.

North boundary 19 chains long, formed by large nulla; East boundary 7 chains long, not well defined; two large stones have been sunk at the two corners. South boundary, 15½ chains long, formed by a prickly-pear hedge; West boundary 12 chains long, formed by road to———. This field is bounded on the North by the village nulla, beyond which is No. 9 "Gutkool," cultivated by———; on the East by No. 2, the Miras of———; on the South by prickly-pear hedge, beyond which is the village site; on the West by road to———; beyond which is No. 14, the Miras of———.

18. The foregoing example, which will be found to correspond with No. 1 of the map, in the opposite page, will, I trust, have made the entries in the field book intelligible, and it will also be evident that the field thus measured can be easily and correctly laid down upon paper by means of the interior and bounding measurements shown upon the sketch. This is accordingly done by the measurer, after his return from the field, each field being plotted separately, and then transferred by means of tracing paper to its proper place in the general map, which may in this way be constructed with great accuracy by natives wholly ignorant of the European methods of surveying. With every care, however, a good deal of adjustment will be required to make all the fields fit into their relative positions, or, in technical language, to make the work close, in a map constructed in this rude fashion; and to assist in effecting this object, the position of each village, and that of two or three of the principal roads or nullas intersecting its adjoining lands, are sketched in the European method, by means of a surveying compass or theodolite. Thus in the example given in the opposite page, the position of the village and diverging roads, marked in red, are obtained by the European method of detail survey; and the whole village lands being thus divided into sections of moderate size, the limited number of fields comprised in each are easily adjusted, in position approximating, very closely to the truth, from the map prepared by the native measurer.

19. Now, though maps of this kind would prove of little service for geographical purposes they yet exhibit the topographical features of each village with considerable accuracy and great minuteness of detail, showing not merely the interior divisions of the lands of the village into fields, but also the directions of the various roads, foot-paths, and water-courses found within its limits. With the addition of a scientific circuit survey of village boundaries, these maps might be rendered sufficiently accurate for every purpose, even to their minutest details; but it appears to me that this additional degree of accuracy is hardly an object of sufficient importance to repay the large expense required to obtain it. The whole of the Deccan has already been surveyed and mapped on a scale of 4 inches to a mile, which is abundantly detailed to serve every purpose of the Collector, Magistrate, and Judge. This question, however, has already been sufficiently discussed in the Joint Report already quoted.

20. The measurement of a village being completed, with its field map as above described, the accuracy of the work is tested by the European officer, who re-surveys and maps a proportion of the interior fields.

21. The classification of the village is then proceeded with, and in this operation every field is again subjected to examination, the accuracy of each entry in the measurer's field book tested and established, and the varieties and proportions of soils in each field, with a minute description of every well or other source from which water for the purposes of irrigation is obtained, are entered by the classifier in his field book, which is kept and numbered much in the same manner as that of the measurer.

22. The work of the classifier is again subjected to examination by the European officer, who re-classifies a proportion of his fields, as he had previously re-surveyed those of the measurer.

23. In the field work, therefore, connected with the survey of each village, there are five distinct operations:—

(1) Every portion of land comprised within the village limits is measured by native surveyors in detail, by means of a cross-staff and chain; the particulars regarding every

such portion are detailed in a field book kept for the purpose, and also shown upon the village map, which is constructed from actual measurement.

(2) The accuracy of this measurement and map is ascertained by systematic test executed by the European officer.

(3) Every portion of land within the village is again submitted to examination by the classifiers, by whom also the nature and peculiarities of its soil and capabilities are ascertained and recorded.

(4) The preceding classification is systematically tested by the European officer.

(5) The site of the village and the position of the principal roads and water-courses traversing its adjoining lands are fixed by the European method of detailed survey, for the purpose of correcting and adjusting the details of the village map, so as to make them approximate very closely to the truth.

24. Under these heads are comprised the distinctive features of the field operations, and they compose a system of Revenue Survey, I have no hesitation in saying, more accurate and complete than that embracing silmilar operations in the N.-W. Provinces. It does not, indeed, include a settlement and demarcation of village boundaries; but this defect has been fully accounted for, and a remedy suggested, in Mr. Goldsmid's and my Report already noticed, nor is it available for geographical purposes at present, but may be made so if the objects be deemed of sufficient importance, by the superaddition of a scientific survey, as shown in my 9th paragraph.

25. During the progress of these operations, a tabular statement is framed of the whole village lands, in which are recorded the designation by which each field or division is known, the name of the cultivator and proprietor, the tenure by which it is held, the number of years it may have been in the possession of its present holders, and the proofs by which each claim to exemption from assessment is supported. Copies of all sanads or other documents connected with grants of land are taken, and a list made of all old papers connected with the management of the village in possession of the hereditary accountant. A census is also taken of the inhabitants, in which the name, caste, and occupation of every house-holder, the number of his family, servants, slaves, cattle, ploughs, etc., the description of tenement he inhabits, and such other statistical information as can be obtained, are embodied.

26. The manner in which the various information collected during the progress of the survey is made to bear in determining the question of assessment, has been fully explained in the Joint Report by Mr. Goldsmid and myself, already so frequently noticed, and it would be needless to fatigue you with a recapitulation of its statement in this place. They will have proved to your satisfaction, I trust, that the various precautions adopted in the N.-W. Provinces, to guard against error of judgment on the part of the settling officer, have been carefully attended to here, and that a liberal standard of assessment, based upon the safe and practical considerations of past payments, in opposition to merely theoretical conjectures, is equally characteristic of both systems.

27. Before concluding, and also in the hope that the observations I am about to make may prove serviceable towards enabling Government to organize an efficient system of survey generally, I must beg to allude to one point of the constitution of that under my superintendence, which I deem essentially defective, and certain, while it continues, to prevent the department acquiring that degree of efficiency of which it is capable. I allude to the inadequate remuneration of the European officers engaged in its superintendence, offering in this a striking contrast to the case of the Revenue Survey of the N.-W. Provinces, where the services of the most able and experienced officers in the civil and military services are retained by means of a liberal and graduated scale of emolument. In the Deccan Survey, on the contrary, there is no prospect whatever of advancement, and the experienced officer who has laboured for years in the department, made himself intimately acquainted with every part of his duties, and whose services to Government are consequently doubly enhanced in value, finds himself in no better position than he occupied when he entered the department, and had everything to learn. The necessary consequence of this is a very general feeling of disappointment at their present position and prospects, entertained by the Survey Officers, rendered keener, perhaps, by the very arduous nature of their duties, and by the knowledge that there is a singular instance of equally responsible and important duties having been performed on the same terms.

28. I took occasion to propose a remedy for this state of things in my letter to your address of the 3rd October 1839, and had the satisfaction of subsequently learning that the justice and expediency of the measures therein proposed were fully acquiesced in by Government. I trust, therefore, that on the present occasion, when the system of Revenue Survey in this Presidency is under the consideration of the Supreme Government, that advantage will be taken of the opportunity by the Honourable the Governor in Council to obtain a satisfactory settlement of the important points now noticed; for we shall vainly expect to prevent a constant and most

hurtful succession of changes among the European officers employed on the survey, while the emoluments and advantages of their appointments continue in every respect inferior to those of most subordinate grades in other departments of the public service.

I have, etc.,

(Signed) G. WINGATE,

Superintendent, Revenue Survey.

Bembleh, 30th December 1840.

No. 229 of 1841.

TERRITORIAL DEPARTMENT, REVENUE.

From

THE REVENUE COMMISSIONER;

To

MR. CHIEF SECRETARY REID.

Dated 15th February 1841.

Sir,

I have the honour to acknowledge the receipt of your letter No. 3302 of the 27th October last, forwarding a copy of Mr. Junior Secretary Halliday's letter No. 137 of the 17th of August, and its accompaniments, and requesting that, after consulting with Mr. Goldsmid and Lieutenant Wingate, I would submit my opinion on the questions raised by the Government of India to consider and report whether a system of mapping every village could not be engrafted on the present operations, and to procure from Lieutenant Wingate a succinct account of the manner in which the survey is conducted, with a description of the actual operations in any one village, as a specimen.

No. 2590.

2. I take this opportunity of resuming the subject of my letter No. 1587 of the 29th August 1839. It will be in Government's recollection that I was favoured, under date the 15th of the same month, with a copy of a letter from the Honourable Court dated the 19th of April preceding, communicating its sentiments respecting the new survey and assessment now in progress in the Deccan, and directed to state whether I would recommend an application being made for copies of such documents connected with the survey in the North-Western Provinces, as the Right Honourable the Governor-General might consider would be useful to this Government.

3. The despatch of the Hon'ble Court, it will be recollected, after approving of the decision of this Government in setting aside Mr. Pringle's survey and assessment, as the basis of the general revenue settlements, expressed a wish to have a somewhat more precise account of the exact means by which it was proposed to regulate the assessment which was to be substituted for that set aside; indicated various points on which the information before it, as regarded this part of the question, was defective; and desired that, if the work were not proceeding in as satisfactory a manner as this Government could desire, the Government of India should be applied to for such information, regarding the survey and assessment now in progress in the North-Western Provinces, as might be considered calculated to throw light on the general question of the revision of assessment, and guide us to a more effectual course of proceeding, for the purpose of obtaining a just and equitable assessment.

No. 1587 of the 29th August 1839.

4. In my reply to your letter I expressed a hope that the correspondence to which It referred, and which must have reached the Hon'ble Court subsequent to the despatch of their letter in question, would have, in a great measure, satisfied their doubts, and cleared up the obscurity in which many of the points they referred to were involved; and suggested that the Government of India should be requested to furnish copies of any documents tending to explain the principles and mode of operation followed in the North-Western Provinces, not because I saw any reason "to apprehend that the work" in the Deccan "was not proceeding in the satisfactory manner anticipated," but because all information regarding similar operations in other parts of the country could not but be useful to the officers employed in the Deccan.

No. 509.

5. A great number of documents of the nature indicated were received from the Government of India, forwarded to me with your letter of the 10th February 1840, and referred by me to Messrs. Goldsmid and Wingate, with a request that they would favour me with their opinions as to the expediency of adopting any measures, forming a part of the system followed in the North-Western Provinces, which they (Messrs. Goldsmid and Wingate) might deem calculated to improve the plan of operations for the survey and assessment of the Deccan.

6. Those gentlemen have accordingly drawn up a Joint Report, which I have now the honour to submit, together with a separate letter from Lieutenant Wingate, containing the information which, in your letter of the 27th October last, I was desired to call on him to furnish. Mr. Goldsmid's letter* on the same subject has been already submitted to Government, as referring principally to the proposed survey of the Southern Mahratta Country, and containing propositions which, if complied with, it was necessary should be considered and decided on without delay; and the greater part of his Report on the survey and assessment of two Tarafs of Taluka Chandore, forwarded with my letter No. 52 of the 8th ultimo, might with propriety have accompanied the letters now forwarded, and will be frequently referred to, as containing a very full and able general exposition of the objects and mode of proceeding in the survey of the Nasik Sub-Collectorate.

7. A perusal of the documents just enumerated will, I have little doubt, afford equal satisfaction to the Governments in this country and the Home authorities, as explaining many parts of the system pursued in the Deccan which were before involved in obscurity, showing that some of the most valuable parts of the system pursued in the N.-W. Provinces, already form part of the plan of operations in the Deccan, and that, where the methods differ, that pursued in the Deccan has been adopted in consequence of local peculiarities, which, as now explained, will, I confidently anticipate, be allowed to form good grounds for considering the system preferred for the Deccan the best adapted to the peculiarities of the province. A perusal of the documents now forwarded will further, I have little doubt, give additional strength to Government's confidence in the admirable qualifications of the Agents it has selected to carry its designs into execution.

Vide the 6th and following para. of their letter above alluded to.

8. The objections of the Hon'ble Court to the plan which it was at first proposed to follow, in revising the survey and assessment of the Deccan, were the want of any clearly-defined mode of proceeding which promised sufficient security for the correctness of the assessment. No principle, it was observed, was laid down to guide officers in the selection of any particular mode of settlement, and the amount of assessment was left too much dependent on the discretion of the settling officer, without any means of checking or correcting it, except by a re-examination of the land itself by another officer not inferior in qualification to the first.

No. 1015, March 17th, 1838.
No. 1813, May 14th, 1838.
No. 2732, July 19th, 1838.
No. 4739, December 31st, 1838.

9. The uncertainty as regards the *mode* of settlement had, as already observed, been in great part removed previous to the receipt of the Hon'ble Court's despatch, as explained in the letters from Government referred to in the margin; the uncertainty as regards the *amount* of assessment will be explained in considering the questions raised by the Government of India in their letter of the 17th August last, to which I would now beg to refer.

10. The greater part of the letter in question relates to the proposed survey and assessment of the Southern Mahratta Country, on which, as the province in question is not within my range, it is unnecessary for me here to remark. On such parts of the letter and its accompaniments as refer to the surveys now in progress in the Deccan, I propose pointing out those parts of the documents enumerated in paragraph 6th, which contain the information required, and which, as far as a description of the mode of operation goes, appear to me sufficiently full and accurate to preclude the necessity of any additional remarks of my own. In following this course, I shall have to state my reasons for recommending the adoption or rejection of the system pursued in the North-Western Provinces, wherever it differs from that followed in the Deccan, and thus comply with the first requisition of your letter under reply, viz., to submit my opinion on the questions raised by the Government of India, without traversing step by step the same ground as that gone over by Messrs. Goldsmid and Wingate in their necessarily very voluminous Reports.

Objects of the survey and assessment in the Deccan.

11. The objects of the operations which those officers are employed in superintending are pretty nearly the same as those of the survey, etc., of the North-Western Provinces, as described in the Governor-General's letter,† except that their agency has hitherto been made comparatively little use of, in re-dividing and re-modelling the various divisions of the country, with a view of rendering the several districts compact and equal, and to "ensure the coincidence of the jurisdictions of the several functionaries in the different departments of the administration," as no necessity for any extensive alterations of such a nature has ever, I believe, been complained of. The same may be said of alterations in the public establishments, with a view of better adapting them to the ascertained extent, population and wealth of the various districts. Some alterations of this kind, as well as in re-modelling the divisions of districts, etc., have been made at the suggestion of the officers employed in the survey

* No. 154 of December 16th, with my letter No. 54 of the 8th January 1841.

† Para. 4th of the Right Hon'ble the Governor-General's letter to the Hon'ble Court, No. 3, of August 18th, 1838.

and assessment; but the necessity for much reformation in the points indicated, has never, that I am aware of, been shown to be great, and it therefore forms no prominent part of the objects of the survey and assessment.

Survey.

Para. 5 of the Governor-General's letter.

12. "An accurate survey of the land, with a specification of the quantity barren and culturable," and a classification of the latter, are here, as in the North-Western Provinces, necessary steps towards the attainment of the objects proposed. To ascertain and record the relative proportion of culturable and cultivated land, is here, from the nature of the prevailing tenures, a necessarily annual operation; and the scale of classes of soil, though in principle that which is perfectly familiar to the people, is, of course, more systematic.

Measurements.

13. In the survey operations under Lieutenant Wingate in the Poona Collectorate, and those districts of Sholapur which belonged to the old Sub-Collectorate, the duty of the surveying officers, as far as the measurements are concerned, is confined to testing and correcting those of Mr. Pringle's survey, which have been there acted on since its completion in the other districts of Sholapur; and in the survey under Mr. Goldsmid's charge, all the measurements are made *de novo*, for, though parts of the Nasik Districts were surveyed by Mr. Pringle, his survey was never acted on, and its correction would consequently, at this distance of time, have entailed more trouble than an entirely new survey. Both in the Northern and the Southern Deccan, the *classification* is entirely new, that of Mr. Pringle's, where it existed, having been found generally too faulty to admit of correction.

Classification.

Governor-General's letter, paras. 6 to 16.

14. The first step preparatory to a survey in the North-Western Provinces appears to be "an accurate adjudication and demarcation of the boundaries of every village by the Revenue Officers."

Demarcation of village boundaries.

15. While the survey operations in the Deccan were confined to districts which had been once before surveyed by Mr. Pringle, and where, from that and other causes, the cases of disputed boundary were comparatively few and unimportant, the necessity for any distinct class of operations, having for their object the demarcation of village boundaries, was never very strongly felt; and while the provisions of the Regulation for adjudicating disputed boundaries were so cumbrous as to bar their being applied in ordinary cases, the cases themselves were seldom of sufficient importance to justify an application for an alteration of the law. When, however, the survey was extended to districts which had not previously been the theatre of any operations of the kind, the case was found to be different, and the want of some means of deciding and marking the village boundaries, in a more expeditious and effectual manner than was practicable under existing regulations, was so severely felt, that Lieutenant Wingate gave it as his opinion, that without it the operations of the survey must be comparatively valueless. The subject has been discussed at considerable length in the correspondence which preceded my letter No. 147 of the 29th ultimo, in which I submitted a draft of an Act for making village boundaries, and deciding such as were disputed, founded in a great measure on the system which appears to be in force in the North-Western Provinces, the manifold advantages of which, as detailed in the Governor-General's letter to the Hon'ble Court, are sufficiently evident. With the assistance of an enactment, such as that proposed, the officers of the Deccan Surveys will be enabled to assimilate this branch of their system very closely to that followed in the North-Western Provinces.

Scientific circuit survey of village boundaries.

16. The next step in the system followed in the North-Western Provinces appears to be a scientific survey of the boundaries and areas of every village, showing in a general way the principal variations of soil and surface.

Governor-General's letter, paras. 17 to 26; Mr. Private Secretary Colvin's note, paras. 4, 5 and 8.

17. The objects of this survey are apparently chiefly of a geographical and topographical nature. It does not appear that, beyond a correct protraction of the village area and of the more prominent features of the country, much correctness is aimed at; as Mr. Colvin states, that "as the measurements" (of the fields of every village by the Native Amins, under the general superintendence of the scientific surveyor) "are not subjected to any check, excepting as to the total area, and the extent of its principal sub-divisions, by the professional survey, it is said that this part of the work is of little value, and that these interior village or field measurements have, in fact, to be done afresh, at a time, to be explained in the sequel, by the Collector's establishments." I should infer, indeed, from paragraphs 20 to 25 of the Governor-General's letter, that it was in contemplation to omit altogether, at this stage of the process, the delineation of any but the very prominent and permanent interior features of the village, and that the scientific survey now only lays down the boundary of the village, and the chief *geographical* features.

18. To this, the first or scientific circuit survey of village boundaries, there is nothing analogous in the surveys on this side of India, and it appears to have been from the want of it that the Government of India has been led to express its surprise "to find that the operations are so conducted as to be absolutely of no value for geographical or topographical purposes, and, it is to be feared, of little more than temporary and doubtful utility even for merely revenue purposes."

Not requisite for revenue purposes in the Deccan.

19. Before adverting to the question raised regarding the value, or otherwise, of the data collected by the Deccan Surveys for topographical and geographical purposes, I would beg to remind Government that all the districts in which revenue surveys are now going on in the Deccan, have been long since surveyed by the officers formerly under the superintendence of Major Jopp; and maps have been compiled, one or more copies of which are, I believe, in the office of every Collector. These maps show the villages, hamlets, nallas, rivers, roads, and all the considerable inequalities of surface, with great minuteness; what greater detail, or difference in the scale of the maps, might be necessary for *scientific* purposes, I am not competent to judge. Possibly, if the existing maps are deficient in these respects, others might be compiled from the same materials, from which I have always understood maps might be drawn on a scale very much larger than those in use in the Collectors' offices, the scale of which is, I believe, four (4) inches to a mile. Of these latter, however, I can speak with safety, that they are amply sufficient for every purpose for which a Collector can desire a map which does not show the divisions into fields, and to effect all the purposes stated in the Governor-General's letter to the Hon'ble Court, as among the objects of the professional survey, viz., "to serve, as it were, as an index to the native village maps, to show at once the position of a village, its proximity to the market, facilities of communication, and the tract in which it lies, which may be marked by peculiarity of soil, scarce or abundant means of irrigation, or other circumstances which are found by experience to affect tracts of country or groups of villages."

Para. 18.

The supply of topographical or geographical data no part of the original plan of the Revenue Survey.

20. But even if it were otherwise, and there were *no* such maps of any use as geographical or topographical documents, I confess I cannot think that it could be charged as a fault in the Deccan Surveys that they did not supply the deficiency. They were undertaken solely at the instigation of *Revenue* Officers, with no other end in view but that of furnishing *Revenue* Surveys, and, up to the present time, the collection and record of geographical and topographical data was never proposed as even a collateral object.

Nevertheless, even for such purposes, the information collected by the Revenue Survey is of considerable value.

21. Still, however, though in drawing them out no particular reference was had to the scientific objects alluded to by the Government of India, the information collected, and the village maps made out by the Deccan Revenue Surveys, must be, I should conceive, of considerable value for topographical purposes; and with one of Major Jopp's maps as a general index, and the village maps drawn out by the native establishments in the manner hereinafter to be stated (and a specimen of which will be found among the accompaniments), I own I am at a loss to know what further can be required for any present practical purpose. However that may be, I would beg Government's attention to the opinion expressed by both Mr. Goldsmid and Lieutenant Wingate, that for revenue purposes a scientific circuit survey of village boundaries, as a preliminary to the present operations, could save no part of the labour and expense of the latter, nor add anything to their value; they could prove no check on fraudulent mismeasurements in a detailed field survey; since, whatever might be the error in individual fields, the field measurers could never find any difficulty in making the total of any large area (to the measurement of which the operations of the scientific survey must necessarily be confined) correspond with that brought out by themselves.

In the Deccan, the expediency or otherwise of a scientific survey of village boundaries not a revenue question.

22. I would beg, therefore, to state my full concurrence in the opinion expressed by Messrs. Goldsmid and Wingate, that the expediency or otherwise of grafting on the present operations a professional survey of village boundaries similar to that of the North-Western Provinces, should be considered solely with regard to its necessity for topographical and other scientific purposes; as it would add enormously to the expense without in any degree adding to the value of the Revenue Survey, *as such;* and should its execution, when considered on such grounds, be deemed advisable, I would beg Government's attention to the opinion expressed by Lieutenant Wingate, that as its previous execution would not have saved one rupee of the expense, or a single detail of the present Revenue Survey, so no alteration in the system of the latter would have saved any of the labour or expense incident on a scientific survey of village boundaries.

Para. 9.

23. For further details on this point—one of the most important, raised by the Government of India on the present occasion—I would beg to refer to the parts of the correspondence now forwarded, which are specified below.*

Governor-General's letter, paras. 32 and 33; Mr. Colvin's note, paras. 6 to 10 and 2 and 3.

Question as to the necessity of entrusting the survey and assessment to different officers.

24. The next step in the system pursued in the North-Western Provinces, appears to be the transfer of the results of his labours, by the scientific surveyor, into the hands of the settling officer, and before showing by what means the necessary maps and returns for the foundation of an equitable assessment are obtained in the Deccan, I would say a few words on the objections to entrusting the survey and assessment to one and the same class of officers. The disadvantages of such a combination of duties are pointed out in Mr. Colvin's note, viz., a tendency to fix the demand of revenue too much upon speculative and uncertain grounds, and consequent over-assessment.

Paras. 2 and 3.

25. The means which are here taken to guard against this result, which is justly termed the worst which can follow any attempt at assessment, will be pointed out when we come to consider the mode in which the assessment is fixed. I will here only explain why I do not apprehend any such consequence from entrusting the two operations to the same Agent in the survey under Lieutenant Wingate.

26. It will be in Government's recollection that at the commencement of the revision of Mr. Pringle's Survey, the system followed in the North-Western Provinces was so far acted on, that Lieutenants Wingate and Nash were sent as Survey Officers under the general superintendence of Mr. Goldsmid, by whom the settlements were to be made. When the latter officer quitted the superintendence of the work in that part of the Deccan, Lieutenant Wingate was selected to succeed him, not from any insensibility to the general advantages of having the two duties of Surveyor and Settlement Officer conducted by separate individuals, but from the very peculiar qualifications which Lieutenant Wingate had manifested as a practical Revenue Officer—the intimate acquaintance he had obtained with the districts to be surveyed and with the views and plans of Mr. Goldsmid—all which circumstances, I believe, led Government to the conclusion that no one was better fitted to carry on the latter gentleman's duty, as Settlement Officer, than Lieutenant Wingate. How far this conclusion has been justified by the mode in which Lieutenant Wingate has discharged the duty entrusted to him, I need hardly stop to point out, Government having so decidedly expressed its approbation at almost every step of his proceedings; but I may be allowed to remark, that the result has certainly not been *over*-assessment, as far as we can at present judge; the only fault that any of the local Revenue Officers have found, or rather expressed their apprehension of, has been that the assessment was too *low*. Had this apprehension been well founded, it might have been an instance of the kind alluded to by Mr. Colvin, where Government did not get the whole of its fair revenue, and would, as he justly remarks, have been overbalanced by the prospect of escaping the contrary and greater evil; but where, in the case in question, further inquiry showed that the effect of the reduction in the nominal assessment had been to give such an impulse to agricultural industry, and so to extend cultivation, that the sacrifice of revenue was merely temporary, and that sometimes, before more than a single season had elapsed, Government derived from the district an actually larger revenue than the average of their former collections, paid without the slightest difficulty or distress, it became evident that the fear of Government's having suffered even a *temporary* loss in extending relief to the over-taxed cultivators was groundless. On this point, I would beg more particularly to refer to the parts of Mr. Goldsmid's and Lieutenant Wingate's letters noted in the margin, and to almost every paragraph of their Joint Report, and will only further remark—1st, that the practice followed here, of requiring all the Survey Reports and propositions regarding the assessment to be forwarded through the Collector, secures sufficient check against over-assessment, provided the Collector be even less qualified for his situation than would be required if he were to be made, as it appears he frequently is in the North-West Provinces, the Settlement Officer; and 2ndly, that the survey under Lieutenant Wingate is the only one in which the two duties of Survey and Settlement Officer *are* combined, and that, whenever the state of the public service may admit of an addition to the number of his assessments, so as to make his duties as Superintendent and Settlement Officer more onerous, and his services as a Surveyor less necessary to the completion of the work within a reasonable period, there can be no difficulty in confining his attention exclusively to the former class of his duties, by placing the surveying and assessing establishment, now under his immediate control, under that of one of his Assistants. In the Nasik Survey, as Government is well aware, the survey is conducted

Para 3.

Para. 4 of Lieut. Wingate's letter of the 30th December, and para. 3 of Mr. Goldsmid's of the 16th idem, forwarded with my letter No. 54 of the 8th ultimo.

* Paras. 7 to 9 of Lieut. Wingate's letter of December 30th.

Paras. 49 to 51 of the Joint Report of Messrs. Goldsmid and Wingate, and paras. 5 and 7 of Mr. Goldsmid's Report of the 16th of December, forwarded with my letter No. 52 of the 8th ultimo.

by officers under Mr. Goldsmid, whose duties are those of Superintendent and Settlement Officer; and in his plan for a survey of the Southern Mahratta Country, submitted with his letter dated the 16th December last, he proposed that the two branches should be kept perfectly distinct.

27. It is unnecessary that I should enter into any lengthened detail to show how the maps and other documents which are to furnish the data for the settlement, and which would, in the North-Western Provinces, be in part prepared by the professional survey, are provided in the Deccan, as the sketch of the operations of their establishments, given by Messrs. Goldsmid and Lieutenant Wingate in those parts of their Reports noted in the margin, will explain better than any abridgment I could offer the whole course of operations—the provision of good field boundaries, the measurement of the individual field, and the mode in which those measurements are recorded, the plotting each field roughly in field book, and the subsequent transfer of it to its proper place in the village map, and more especially the mode in which a certain portion of the work in every village is tested by the European officers in a way to render as certain as possible the detection of any error which may have been committed.

Governor-General's letter, para. 32, and Mr. Colvin's note, para, 4.

Preparation of village maps, measurements, and mode of testing ditto.

Lieut. Wingate's Report of December 30th, paras. 12 to 20; Joint Report, para. 48; Mr. Goldsmid's Report of December 16th, para. 2nd; ditto on Chandore, paras. 39 to 61 (this is the Report forwarded with my letter No. 49 of the 9th January).

28. I would beg, however, not to be understood, from the observations contained in paragraphs 24 to 26, as expressing an opinion that it is at all desirable to entrust the superintendence of the survey and duty of making the settlements to different officers. It undoubtedly is desirable that the Settlement Officers should not be burdened with the immediate superintendence of any of the native surveying and classifying establishments; but I would certainly recommend that the Survey Department should be subjected to the control of the officer entrusted with the settlements, as by no other arrangement can we ensure that the survey establishment should procure the information required of the kind and in the shape most useful for the Settlement Officer. In the Broach and Guzerat Survey we have an example of the evils of a contrary mode of proceeding. Though the scientific part of the work was most ably executed, and the statistical and other information collected most minute and extensive, it is to this day comparatively useless, owing to the operations having been conducted without any reference to, or connexion with, the local Revenue Officers; so that the object of supplying the wants of the latter, by forming a foundation for future revenue settlements, was frequently lost sight of. This could not have been the case had the officers, like those of the Deccan Survey, been constantly reminded that the end and object of their labours was to propose a new assessment, and that they must be prepared not only to defend their propositions in theory, but to submit them to the test of being immediately put in practice. Nor, indeed, does the course I have recommended seem at variance with that followed in the N.-W. Provinces, where the scientific survey seems to supply many of the data of a more general description, which are made use of by the Settlement Officers. All the measurements, etc., which are more immediately used in the settlements, are either made or tested by the establishments under their own immediate superintendence.

29. As this is a branch of the work, the correctness or otherwise of which admits of being at once correctly tested, I would beg Government's particular attention to paragraphs 50 and 51, and note Z of Mr. Goldsmid's report on Chandore, as a specimen of the extent and nature of the errors detected respectively by the European and native testers of the measurements; and would remark that, though it is of course within the bounds of possibility that an error may remain undetected by either of these successive tests, the probability of its being so is reduced as low as appears practically possible; and that the system of subjecting a certain fixed portion of the measurements of every village to such a strict revision—that portion being selected in a manner which makes it impossible to say what particular fields will be re-examined—must render anything like systematic wilful fraud almost impracticable by increasing so greatly the likelihood of its being detected.

Correctness of measurements.

30. Before quitting the subject of the measurements, I would again beg that it may be borne in mind that in all the districts of the old principal Collectorate of Poona to which Lieutenant Wingate's operations have been hitherto chiefly confined, the measurements of Mr. Pringle's survey have been in general adopted; and that, in this part of the work, the duty of Lieutenant Wingate's establishment has been chiefly confined to testing, and, where necessary, correcting the measurement as already made and recorded by Mr. Pringle's survey.

31. The next step is to *classify* the land, which is effected in the manner described at length in those parts of the annexed documents mentioned in the margin. I would particularly beg attention to Lieutenant Davidson's memorandum on this subject (which forms an appendix to Mr. Goldsmid's Chandore Report), as a very clear explanation of a process sufficiently simple in itself, but which, from a general description, might be

Classification.

Paras. 62 to 76 of Mr. Goldsmid's Report on Chandore of the 1st November 1840, No. 135, and the memorandum from Lieut. Davidson, appended to it; paras. 21 and 22 of Lieut. Wingate's

Report of December 30th, and paras. 9 to 14 of their Joint Report.
Forwarded with my letter No. 49 of the 9th January 1841.

supposed to be somewhat complicated and intricate; and also to the 9th to 14th paragraphs of Messrs. Goldsmid and Wingate's Joint Report, which are chiefly intended to show that the objections taken by the Board of Revenue for the North-Western Provinces, against the system of classification followed in Sir Thomas Munro's Surveys in the Madras territories, do not apply to that followed in the surveys now in progress in the Deccan.

Statistical information.
Lieut. Wingate's Report, para. 25; Mr. Goldsmid's Chandore Report, paras. 77 to 79.

32. The whole of the information thus obtained is recorded in convenient forms for reference; and during the progress of these various operations, the peculiar facilities which are offered to the officers employed are taken advantage of to obtain and record a great amount of statistical information, more detailed and correct, as may easily be supposed, than would be obtainable in any other way; all old documents, such as sanads, etc., connected with the land, and useful in showing the tenure on which it is now, or has been held and assessed, are registered and described, and, when important, copied.

Vide paras. 22 and 33 of Governor-General's letter, and paras. 6 and 10 of Mr. Colvin's note.

33. It will be seen, then, from a perusal of those parts of documents to which I have more especially referred, that at the point where the duty of the Settlement Officer in the North-Western Provinces begins, the officers in the Deccan Survey have collected a mass of data considerably more detailed and minute than those required for a settlement in the North-Western Provinces, for the obvious reason that the nature of the prevailing tenure in the Deccan requires that the settlement should be considerably more in detail, than, to judge from the documents with which I have been favoured, is thought necessary in the North-Western Provinces. I trust, however, that Government will, at the same time, be satisfied that this greater minuteness of detail has not been carried to such a length as in any way to render it a matter of difficulty to satisfy the superintending authority of the correctness of the work performed. This fault, one of the most prominent ones of Mr. Pringle's Survey, is one which has been most carefully guarded against in the present operations, and I would beg particularly to point out that where minute correctness is attempted it is not, as in Mr. Pringle's Survey, and in many of those to which the observations in the letter from the Sadar Board of Revenue refer, in estimates of produce and expenses, profits, rents, etc., but in measurements and classification, where, with due care, a very high degree of correctness is very easily attainable, and is of the greatest importance to the fairness of the assessment. That such care has been taken Government will, I trust, be satisfied, when the precautions which are taken to prevent error or fraud, and the repeated and severe tests to which the work is subjected at every step, are taken into consideration. On this point I would more particularly beg attention to those parts of the documents now submitted which are noted in the margin.

Lieut. Wingate's Report, paras. 14 and 20 to 22, and clauses 2 and 4 of para. 23; Joint Report, paras. 8, 10 to 14 (especially 13), 48 to 54.
Mr. Goldsmid's Chandore Report, paras. 41 to 76 (especially 41, and 43 to 49); and Mr. Goldsmid's Report of December 16, No. 154, para. 2.

Determination of the assessment.

34. Furnished with the data thus procured, the Superintendent of the Survey proceeds to the last and the most difficult of the operations with which he is charged, viz., to fix the assessment which is to be levied; and the mode in which this is effected will be found very fully explained in the documents to which I have so often had occasion to refer,* a perusal of which will, I trust, satisfy the Government of India that so far from the assessment now in progress in the Deccan being based on speculative and uncertain grounds, or upon conjectural calculations and estimates, as would appear to be apprehended by the Government of India, it is deduced from a consideration of all the particulars mentioned in the documents which relate to the North-Western Survey, as allowed weight in fixing the jummas in the settlement of those provinces, and this consideration is more especially extended to the past realizations of revenue.

Reports of the Superintendent and his Assistants.

35. When all his inquiries are concluded, the Superintendent of the Survey submits to Government, through the Collector and Revenue Commissioner, Reports from himself and his Assistants, who may have been entrusted with the immediate superintendence of the measurements and classification. In these Reports are stated generally the result of the survey, with a description of the districts, and of any peculiarities in the soil, climate, population, state of agriculture, etc., etc., which are likely to affect its assessment,

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* Mr. Goldsmid's Chandore Report, paras. 83 to 89.
Mr. Goldsmid's letter of the 16th December, No. 154, paras. 2 to 4; Joint Report, paras. 15 to 17; Lieut. Wingate's Report of December 30th, paras. 3 to 5 and 26.

together with a particular history of its past revenue management and realizations, elucidated by diagrams, which show at a glance the proportions which the cultivation, assessment, and the collections have borne to one another during our occupation of the country; and by tables of prices, population, stock, etc., derived from the statistical information which has been collected; and stating, as clearly as is possible in such an operation, the reasons for the rates of assessment which the Superintendent proposes.

36. The Collector and Revenue Commissioner, in forwarding these Reports, have an opportunity of bringing the conclusions of the Superintendent to the test of such local knowledge and experience as they may possess; and, if the propriety of adopting the rates proposed be made out to Government's satisfaction, the Survey Officers proceed to draw up, from the returns of classification, statements showing the rent at which each field is thereafter to be assessed, at least during the terms of thirty years for which it has been declared that the present assessment shall remain in force.

37. As all that the Government of India required was a clear and precise explanation "of the duty assigned to the several parties in the business of survey and settlement, and of the safeguards on which reasonable reliance can be placed against excessive assessment," I trust that the documents above referred to will be found to contain the information desired, especially Mr. Goldsmid's Report on Chandore (forwarded with my letter No. 52 of the 8th January last), and Lieutenant Wingate's now submitted; but as it is impossible to say beforehand what points we may have left obscure, from their relating to local peculiarities which are familiar to us, and appear therefore to require no explanation, I would respectfully beg that any such deficiencies which may be apparent should be pointed out, a final judgment on the point being deferred pending the receipt of what I confidently hope will prove a satisfactory explanation.

Over-assessment certainly not a fault of the Deccan system.

38. Of the result of operations which have been so lately commenced, and so frequently interrupted by the removal of the officers employed, when their Regiments proceeded on active service, it would, perhaps, be premature now to speak; but I may be permitted to allude to the very general satisfaction which has been expressed by the parties more immediately concerned—the cultivating ryots—in every district in which operations have been commenced, and to the uniformly concurrent testimony of all the local Revenue Officers, to the impulse which has been imparted to agricultural industry.

39. The operations of the survey must, in my opinion, be extended to a very much larger tract before any safe conclusions can be drawn from its *results;* but when in districts the cultivation of which has been long declining, and heavy balances of revenue accumulating, we find that though the nominal assessment has been greatly reduced, cultivation becomes so extended as to recompense, and sometimes exceed, in the first and second seasons, the very heavy sacrifice which Government had made in reducing the jummâ on the land in cultivation at the time the survey commenced. When this is effected at the same time that the greatest pains are taken to prevent any artificial inducement to extend cultivation, and when, by setting up claims which had long been allowed to lie dormant, and by resorting to various expedients to obtain possession of land which they cannot hope to cultivate for several seasons to come, the ryots show that they consider the land to have acquired a value which it did not before possess, I cannot but think that whatever may be the fault of our system in other respects we may safely take credit for having avoided that most fatal one of over-assessment, the correction of which was the chief object of commencing the present operations.

40. My reply to the question put in the 2nd paragraph of your letter under reply has been anticipated by the foregoing observations. For every purpose for which a Revenue Officer can desire a map, those already furnished by the late survey under Major Jopp, and those now making out by the Deccan Revenue Surveys, of which a specimen is annexed, seem to me amply sufficient; and if anything more accurate or detailed be required, it must be, I conclude for some purpose of speculative science, on the necessity or otherwise of which I am not required to express an opinion.

No. 167 of December.

41. In conclusion, I would beg Government's particular attention to the 27th and 28th paragraphs of Lieutenant Wingate's Report. I have already respectfully tendered my opinion as to the inadequacy of the pay allowed both to the Superintendent and his Assistants, and will, therefore, here only express my hope that the Governor in Council may see fit to take the present opportunity of obtaining the sanction of the Supreme Government to paying the Survey Officers on the same scale as that allowed to other officers similarly engaged.

PART III.

REVISION MEASUREMENT AND CLASSIFICATION RULES OF—

R II 1700—20

A.

REVISION MEASUREMENT AND CLASSIFICATION RULES FOR THE DECCAN AND SOUTHERN MARATHA COUNTRY SURVEYS.

REVISION MEASUREMENT RULES.

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SECTION I.

CHAPTER I.

Division of Land into new Survey Numbers.

Rule 1.—All "Revenue Survey Numbers" are to be re-measured according to the boundaries shown by the mounds and stones now in existence, but according to the rules given below some entire "Revenue Survey Numbers" will have to be divided into two or more "New Survey Numbers": in doing this on no account is a portion of one "Revenue Survey Number" to be taken out and included with a portion of an adjoining "Revenue Survey Number" to make a "New Survey Number."

Rule 2.—In many cases the boundary line of a number is shown by a straight line on the old village map, while according to existing boundary marks there are bends in the sides of the field. Measurers are in the habit of ignoring these bends, and making the new boundary line straight in accordance with the old map: by doing thus they break Rule 1 above which requires measurements to be made according to the boundaries shown by mounds and stones now in existence. The measurers must be ordered invariably to measure according to the boundary mark found in the field.

Rule 3.—A person whose name is entered in the Government Records as holding Government land, is called the "Khatadar" of that land, and a person whose name is entered to Inam land is called the "Inamdar" of that land.

Rule 4.—Any person holding land under a "Khatadar" or "Inamdar" without his name being entered in the Government Records is to be called a "Pôt Lavnidar." Any person holding land by the right of inheritance is to be called a "Pôt Hissedar."

Rule 5.—If in any existing "Revenue Survey Number" there are more "Khatadars" than one, then that "Number" is to be broken up and divided into separate "New Survey Numbers" or Pôt numbers according to the "Vahivat" of each "Khatadar."

Rule 6.—But if each sharer's Vahivat is less than an acre in area, each must not be made into a separate number, but a sufficient number included together so as to make numbers within two acres in area. Each share must be measured separately, and shown separately in the measurer's books (as, Pôt numbers are shown in Kanara work), and also entered in the measurer's Súd.

Rule 7.—If a small share does not adjoin another small share, it must not be included in an adjoining full-sized share. but however small must be made into a separate number.

actual dry-crop area the number should be considered a dry-crop one. And as the two acres of garden land are equivalent to 10 acres of dry-crop, this added to the actual dry-crop, 25 acres, gives acres 35 as the size of the number, which therefore, by the standard for dry-crop numbers, requires to be broken up into two numbers.

Example 4th.—A number contains 5 acres of garden and 10 acres of rice land: according to the above Rule the garden becomes 25 acres and the rice 30 acres. The rice area being more than the garden area the number should be considered a rice one. And as, by the proportions given in Rule 26, the 5 acres of garden land are equivalent to acres 8—13 of rice land, these acres added to the actual rice area, 10 acres, gives acres 18—13 as the size of the number, which therefore, by the standard for rice numbers, requires to be broken up into two numbers.

Rule 30.—If it is necessary to break up mixed numbers, if possible two mixed numbers should not be made, but one or more entirely dry-crop number and the others entirely rice or garden.

Rule 31.—It frequently happens that deposits of soil are thrown up by streams. If the land so formed has been assessed, and the permanent right of separate occupancy granted to any person by the Collector and so recorded in the village accounts, the land must be made into a separate number, and the name of the occupant entered. If the right of cultivating the land is put up to annual auction, a remark should be entered to that effect in the measurer's books, but no name is to be entered, and the land so sold by auction will be made into a separate new number.

Rule 32.—If such alluvial land, whether wasted or cultivated, adjoins a Government number and is not of the nature provided for by Rule 31, it is not to be made into a separate number, but is to be included in that adjoining Government number.

Rule 33.—When the area of an Inam number bounded by a river or stream is found by Revision measurement to exceed, owing to alluvial deposit, the recorded area of the Inamdar's holding, a new number is to be made of such deposit when the increase exceeds 20 gunthas, and also exceeds one-tenth of such recorded area, but not unless both these conditions are fulfilled. To any new number thus made the cultivating Inamdar's name is to be entered as occupant of the new number. But if the new number is not cultivated it should be entered as Government waste.

Rule 34.—It may often happen, however, that an increase in area is due not to a deposit of soil from the stream, but to differences here and there between the old and new measurements. In all such cases, therefore, the calculations of both old and new area should be at once examined by the measurer and the sketches of the old and new numbers compared. If after this examination the increase of the area should be proved to be the result of stream deposit, the Assistant will give the necessary order for a separate number to be made; but not otherwise. In any case the measurer will report the matter for orders.

Rule 35.—Clause 1.—In the Chikodi Taluka and those north of the Krishna River both in Belgaum, Kaladgi, and Satara, "Mal" lands not considered to be so bad as to come under the head of "Parampok" were made into survey numbers from 40 up to 60 acres in the original or "Revenue Survey." Many of these numbers still remain unoccupied. All such unoccupied assessed numbers of "Mal" land of area under 45 acres may be confirmed in Revision Survey. If over 45 acres and less than 75 acres they will be divided into two numbers, over 75 acres and under 120 acres into three numbers, and so on.

Clause 2.—The above does not apply to undoubted "Parampok" or unculturable "Mal" lands which will not be broken up at all.

Clause 3.—Neither does it apply to occupied "Mal" lands which will be broken up under Rules 15 to 18 above.

Chapter II.

Inam Lands.

Rule 1.—When Inam and Government land are included in one existing "Revenue Survey Number," and the two descriptions of lands are divided by a boundary according to which different holders cultivate, one holding the Government land and another the Inam, then separate "New Survey Numbers" should be made according to the existing occupation.

Rule 2.—However small a "Revenue Survey Number" may be, if it contains Government and Inam land, it must be made into at least two "New Survey Numbers" of about equal areas or as many more as may be required according to Rule 14 of Chapter 1.

Rule 3.—If any Inam is found to be divided among sharers (Pôt Hissedars) and each sharer's name is separately recorded in the accounts to his specific share of land, and has separate "Vahivat" with definite boundaries, then each such sharer will be considered the same as a Government Khatadar, and existing Revenue Survey Numbers will be broken up in the manner directed in Rule 5, Chapter 1, according to the Vahivat of sharers.

Rule 4.—In some cases it will be found that sharers in Inams have no share of land recorded to their names in the accounts, but merely the proportion of Judi due from each : in such cases if the parties are present and agree to point out lines of boundary, numbers may be measured according to those lines: but if they are not present or do not agree, the Mamlatdar must be written to by the Assistant to arrange to have the boundaries defined.

Rule 5.—The above applies to all kinds of Inams in which there are sharers recorded in the accounts, but for the most part the Inams of Patels, Kulkarnis, Desais, and Deshpandes will be found divided in the accounts, among separate sharers.

Rule 6.—In some cases Inam land is held by one person whose name alone is entered in the village papers. Under him are shareholders with separate boundaries to their shares in the field, without any separate record of their names in the village accounts either for a definite area of land, or for a separate payment of Judi; these persons frequently petition to have their shares measured separately, but this is not to be done without the consent of the Inamdar in whose name the Inam is entered in the village papers, unless the old number is required to be made into two or more numbers under Rule 14, Chapter 1.

Rule 7.—In case any shareholder in an Inam has his share of the Inam separately defined by an order of a Civil Court, and pays the assessment or cess due from him directly to the village authorities, this share is to be made into a separate new Survey Number.

Rule 8.—In the Satara Collectorate, Revenue Survey Numbers containing both Government and Inam land are to be divided in the following manner : each bigha of the recorded Inam area is now to be considered as equal to an acre, and Inam numbers formed accordingly of the best soil. The remaining area of the poorer soils is to be formed into Government Numbers.

CHAPTER III.

Pardi Numbers and Village and other sites set apart for public utility.

Rule 1.—All Pardi land is to be measured according to section 3, para. 60,* of the printed Revenue Survey Rules.

Rule 2.—Any dry-crop Pardi land on which assessment is paid, and is more than 10 gunthas in area, must be measured as a Pardi number. If less than 10 gunthas in area, it is not to be noticed, no matter whether it pays assessment or not.

Rule 3.—If Pardi land is met with on which rice or garden crops are grown, and it is above 5 gunthas in area, it must be measured as a Pardi number, whether the land pays assessment or not.

Rule 4.—In large villages there are frequently separate burying grounds, and it is not usual for a right of cultivating to exist in them ; such burying grounds should be made into separate numbers according to their limits. But in the Karnatik it is common to bury in the cultivated fields, and cultivation is carried on in the same ground : these burying places it is not possible to make into separate numbers. In short, spots specially and exclusively devoted to the purpose of burial grounds are to be made into separate numbers, and separate numbers are not to be made of cultivated lands in which burials may occur.

Rule 5.—Land included by the Revenue Survey in the village site (gaonthan) is not to to be made into new Survey numbers, but will continue to be included in the village site. This does not apply to Pardi numbers, which will be measured according to the orders relating to the measurement of these numbers.

Rule 6.—All entire numbers which at the last settlement were set apart as Turmundi, Masanwat, etc., or given for any common purpose, such numbers being adjacent to the village site, should be in the present survey measured into the village site and not made into separate Survey numbers, which would entail expenditure on boundary marks to no purpose. Tanks of 2 acres or less area, adjoining the village site, are to be treated in the same way.

Rule 7.—The above does not apply to large Parampok numbers which may have been given for free grazing. Nothwithstanding that such numbers may adjoin the village site, they should be measured separately from it. But Parampok numbers of 5 acres or less area adjoining the village site are to be included in it.

Rule 8.—Any burying ground, place whence potters take clay, or other place of public utility or convenience, should be made into a separate Revenue Survey number or Pôt number ; if such land has been hitherto included as Pôt Kharab in an occupied number, the new number

*The site of an inhabited village, according to the old records, should not be measured as a whole ; but after the village lands are all measured, such of the culturable " Pardias " (enclosures) within the site of the village as are more than half an acre in extent, are to be measured separately, and to have stones placed at their corners and bends and they should be shown in the village map by dotted lines. These " Pardias " should form a separate series of " numbers " and their measurement should be entered at the end of the field book, in order that the question of assessing them may be afterwards considered.

or Pôt number shall be entered in the name of the Khatadar of that number with a Shera describing the public purpose for which the land is set apart, and stating that it cannot be put to any private use by the cultivator without the Collector's permission.

CHAPTER IV.

Parampok and Waste Lands.

Rule 1.—In the previous survey "Anadi Banjar" or immemorial waste land was considered unfit for cultivation and was measured into large "Numbers"; such land is not now to be considered unfit for cultivation, because in some cases if labour were applied to this land it could be cultivated, and if they are allowed the opportunity people will take it up for cultivation. Whenever this land is found capable of being brought under cultivation, the old "Revenue Survey Numbers" must be broken up into new "Survey Numbers" of about 20 acres in area. But any "Revenue Survey Numbers" which have been given to the villagers as free grazing, and shown as such in Village Form No. 1, must be left as they are, and not be broken up.

Rule 2.—Parampok land, that is land which cannot be turned up by the plough and is only of use for grazing purposes, is to be left in large 300-acre "Numbers" according to the present rules.

Rule 3.—Small detached pieces of land fit for cultivation are occasionally met with in Parampok "Numbers." If these pieces are (5) five acres in area they should be made into separate "Numbers." In doing this as much of the adjoining Parampok as is required to make straight boundaries should be included in the "Numbers," but land out of "Numbers" which have been given as free grazing must not be included in these or in any other "Numbers."

Rule 4.—In jungle lands "Revenue Survey Numbers" over 300 acres should be so far sub-divided that no number should exceed 400 acres; numbers under that area being kept untouched in Revision Survey.

Rule 5.—In bare hill lands like those in Dambal a larger limit may be taken, and Revenue Survey Numbers which are found to be in excess of 600 acres should alone be sub-divided into 2 numbers.

Rule 6.—In some villages there are large Kharab numbers, only a portion of which is given to the villagers for free grazing. For some numbers a remark is entered in the village papers that one-fourth or a larger portion is given for free grazing, in others that a certain number of acres are given, but it is not stated that the area given for free grazing is situated in any particular part of the number. In such cases a "Revenue Survey Number" of about the area laid down must be made on the side of the number nearest the village.

Rule 7.—In some villages of the Dharwar Collectorate where indifferent soil is met with, the land has been made into "Numbers" of from three to five hundred acres. Such numbers are not to be broken up into 20-acre numbers according to Rule 1, Chapter 4, but only such land as is fit for cultivation, and likely to be taken by the villagers, is to be made into 20-acre numbers. On this subject orders should be asked for on commencing work in a new taluka.

Rule 8.—The information as to how many persons are likely to take up land can be obtained from the Village Officer, but as a rule the proportion of such numbers should not exceed 5 per cent. of the total new numbers of the village. It is better for the Assistants in charge of measuring establishments to under-estimate the number, for if more numbers are required they can be made at the time of classification, and thus prevent a useless expenditure for boundary marks.

Rule 9.—When large numbers containing inferior soil are met with, the Measurers must report to the Assistant for orders.

Rule 10.—The above rules and Rule 1 of this chapter are not applicable to Parampok stony numbers, or to jungle numbers: these are to be broken up as directed in Rules 2, 3, 4, 5 of this chapter.

Rule 11.—If the remains of rice embankments are met with in jungle numbers not in Forest Reserves, the land should be measured into numbers of about 3 acres: but isolated pieces of 20 gunthas or less should not be noticed.

Rule 12.—All contiguous Forest Reserve numbers are to be made into one "Survey Number," no matter into how many "Revenue Survey Numbers" they were divided into in the former survey.

Rule 13.—All tanks watering separate survey numbers, and tanks of public utility, unless situated in Parampok numbers, should be made into separate Survey numbers, no matter how small their area.

Rule 14.—In measuring tanks into separate Survey numbers, the dam is to be included in the tank, and not in any adjacent number: and the boundary marks placed at the foot of the dam. This rule is to be observed whether at the original survey the dam has been measured into the tank or not.

Chapter V.

Rules for Measuring Roads.

Rule 1.—The breadth of all roads is to be made the same as in the printed Revenue Survey Rules.*

Rule 2.—Made-roads are to be measured as follows.

Rule 3.—Where the road has been already measured as the boundary of Survey Numbers, the old boundary marks are to be strictly followed.

Rule 4.—Where, though not yet measured by the Survey Department, the boundaries of the land taken up for the road are clearly ascertainable from the Mamlatdar, those boundaries are to be adopted.

Rule 5.—In other cases the boundary marks should be placed at 5 annas' distance from a single gutter, or at 2 annas' distance from a double gutter.

Rice land.

Clause 1.—If the rice land extends up to the made-road, the boundary of the number must be made (2) two annas from the side of the single ditch.

Garden land.

Clause 2.—If garden land is bounded by a hedge, the hedge must be made the boundary. If there is no hedge then make the boundary 2 annas from the gutter; if there is no gutter, then make the boundary 4 annas from the roadside.

Clause 3.—In case there is a house or a wall at a distance of less than (5) five annas from the road, the boundary mark stone must be erected at the foot of the wall or house.

Clause 4.—In case there is no ditch at the side of a road in dry-crop "mal" or kharab land the boundary of the "Number" is to be made at the distance of (5) five annas from the side of the road.

Clause 5.—Road-side trees planted by Government authority must be included in the road area.

Rule 6.—It frequently happens in black soil that the road which was measured as a road in the previous survey has fallen into disuse, the present road going on one side of the old road, and the old road is not made use of either during the rains or fair weather; in such cases the measurements must be made according to the roads now in use, but should the traffic still go along the old road, and the new road is only made use of during the fine weather, then the measurements must be made according to the old road.

Rule 7.—When a made-road passes through a jungle number, the jungle on either side should be made into separate numbers, but no boundary marks should be raised along the road. Where the road enters the jungle a mound should be erected at right angles to the road, and where the road leaves the jungle a mound should be erected at right angles, provided no marks have been erected by the Forest Department at that spot: thus where a made-road goes into the jungle there will be two numbers, one on each side of the road, and mounds at right angles where the road enters and leaves the jungle.

Rule 8.—If the present width of a road is 4 annas less or more than that laid down in the printed Revenue Survey Rules, no alteration in its width is necessary, and the numbers on either side are to be measured according to the old boundary marks which are to remain intact. But when a road of only one chain in width is required by the Rules, and the present road is two or three chains in width, then a road only one chain in width is to be made, and the land in excess is to be included in the adjoining numbers. If the adjoining number is Inam, the area so included must be separately recorded in the Measurer's and Classer's books, and Pahni Sud and a note must be made of any trees standing on the land so included.

Rule 9.—No road except those already shown in the old Revenue Survey maps is in the Revision Survey to be confirmed without the sanction of the Assistant Superintendent. This does not apply to made-roads.

Rule 10.—Numbers bounded by a made-road which was constructed before the original survey are to be demarcated by a corner stone at the proper distance from the road, and one mound showing the direction of the boundary of the number.

Chapter VI.

Boundary Marks.

Rule 1.—Whatever fresh mounds and stones are required must be erected according to the following Rules.

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* These rules are printed as Chapter III, Section X, Kanara Measuring Rules, Appendix B, pages xxvii—xxix.

Rule 2.—When the length of boundary between the corners of a "Number" is less than 25 chains, no mound should be raised in the interval, but in case there are bends a stone should be fixed at each bend.

Rule 3.—Clause 1.—When the line of boundary between the corners of a "Number" is more than 25 and within 50 chains in length, one mound should be raised midway between the corners, and stones fixed at all intermediate bends. It is not necessary however to place the intermediate mound exactly half way between the corners; when measuring the line of boundary, half the distance should be estimated by the Measurer, and marks made there for the erection of the mound.

Clause 2.—When the line of boundary between the corners of a Survey Number is more than 50 chains in length, an intermediate mound should be raised at every 20 chains' interval.

Rule 4.—The number of mounds and stones which will have to be erected for a "Number" according to Rules 2 and 3 above, must be shown in the boundary mark sketch of the "Number" in the Measurer's book. As many as possible of existing old boundary marks should be made use of in the present survey. In some cases the old boundary marks being of no use will have to be cancelled, and such marks are not to be shown in the boundary mark sketch of the number.

Rule 5.—Clause 1.—As many of the old mounds as are made use of in the present survey are to be marked with chunam. All mounds in excess of the number required by the present orders should be entirely removed. In order to mark such mounds for removal they should have a piece cut out of the centre on the top of the mound.

Clause 2.—On the commencement of Revision work in any taluka, a general notice should be issued through the Mamlatdar to the effect that occupants of fields where superfluous boundary marks are found to exist will be required to remove such marks within a specified time, and that if they neglect to do so, the charges incurred in the removal of such marks will be recovered from them. The time specified in the notice should ordinarily be not less than 5 days.

Clause 3.—In case of failure on the part of any occupant to remove his superfluous boundary marks within the allotted time, hired labour must be employed for their removal, and the rate of hire to be paid should be referred to the Superintendent for his sanction.

Clause 4.—As a general rule, measurers should be required to certify to the removal of superfluous marks as a part of their boundary mark inspection. It is foreseen, however, that delays in the obliteration of the marks will frequently occur, necessitating a second visit of inspection by a survey subordinate. In such cases experienced learners may be usefully employed in the completion of this work.

Clause 5.—Where cost is incurred in the performance of this duty, statements for its recovery should be prepared in exactly the same manner as is now done when hired labour is employed in erection of new boundary marks.

Rule 6.—The Assistants must fix the rates for erecting new mounds, and the boundary mark accounts must be made out in the usual way. If a new mound has to be erected, the usual mark for it must be made in the bandh book; but if one has only to be repaired a dot must be placed over the mark thus (∸).

Rule 7.—Remarks as below are to be entered below the boundary mark sketch:—

Mounds Nos. 1, 3, 5 are in good repair, stones Nos. 7, 2 are in good repair. These have been made use of (*or* have to be repaired). If the mounds and stones are not in good repair, then the remark that they are in good repair cannot be used: in such cases the remark above in brackets must be used.

Mounds Nos. 2, 4, 6, and stones No. 8 are new ones which have to be erected for this "Number."

Rule 8.—When it is necessary to erect intermediate mounds along the boundary of a number, it is not necessary that they should be erected at exactly equi-distant intervals. If the old mounds are not exactly equi-distant it does not matter, as many of them as are required should be utilized. *Example*:—If 6 intermediate mounds are required along the boundary of a number, and there are 10 old ones in existence, then cancelling and confirming alternately, 4 of them should be cancelled and 6 retained, but no new mounds are to be erected. If 4 mounds are required and there are only 2 old ones in existence, then 2 new mounds should be erected and the 2 old ones be confirmed: on no account are new mounds to be erected because the old mounds do not happen to be exactly equi-distant from each other.

Rule 9.—Stones at present existing in the fields must be utilized to the fullest extent.

Rule 10.—Care must be taken that stones are buried in the ground for two-thirds of their length.

Rule 11.—The cost of mounds and stones unnecessarily erected will be recovered from the Measurers who erect them, for according to the first Rule of the Revision Survey Rules, the measurements are to be made according to the boundaries now found in the field, except where alteration is necessary on roads, or as otherwise specially directed in these Rules.

Rule 12.—Measurers when breaking up oversized old Survey numbers are in the habit of making the corner of the new number at a few annas distance from an old intermediate mound which is cancelled. For the future whenever there is no objection on account of interference with vahivat, Measurers must make use of intermediate mounds to form the corner of the new number when breaking up oversized old Survey Numbers.

Rule 13.—The following form of statement and remark regarding the boundary mark is to be entered below the plot of the number in the fair field book :—

	Mounds.	Total.	Stones.	Total.
Old marks to be repaired	5, 6, 7	3	..	..
Do. do. entirely removed ..	14, 15	2	..	..
Do. do. confirmed ..	1, 2, 3, 4	4	9, 13	2
New marks do. erected	8, 10, 11, 12	4	..	..

" Where new mounds and new stones are entered in the above list as to be erected no old mounds and stones exist now and no cancelled stones are available in the number, to put up in places where new stones are required."

Rule 14.—Forms will be supplied to the Measurers as below, and after the boundary mark inspection of a number is completed, they must enter in this form the number of old mounds and stones confirmed, and number of new mounds erected for each number, and send in the return with the boundary mark account of the village.

Moujeh ____________ Taluka ____________ Zilla ____________ .

Return of boundary marks erected in this village by ____________________

Measurer of the ________ Establishment.

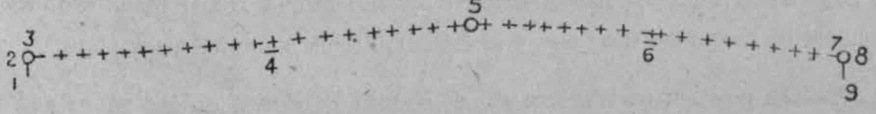
Date.	Numbers.		New mounds.	Number of old mounds in good order confirmed.	Number of old mounds confirmed and repaired.	New stones.	Old stones confirmed.
	Old Survey No.	New. Survey No.					

Rule 15.—In the former survey, stones were erected instead of mounds in places where the latter were liable to be swept away owing to streams having changed their courses; when it happens that mounds can be erected in such places, this should be done. In a similar way, in places where in the old survey mounds were erected, they are now liable to be washed away ; in such cases stones should be substituted for mounds. Stones must not be unnecessarily substituted for mounds, but only where it is certain that a mound will be washed away.

Rule 16.—The Measurer must make a note near the sketch of the number in the fair field book in every case in which stones have been substituted for mounds, or *vice versa*, clearly stating the reasons for doing so. He will also make a separate list of all such numbers which he will keep on the last two pages of his rough field book. To this the Assistant Superintendent can refer when testing.

Rule 17.—In the old, that is, Revenue Survey Numbers, it frequently happens that when the number was formerly measured there was no hedge or other well defined boundary marking the boundary of the number; in consequence of which the boundary marks were erected according to the rules: but since then a hedge or other well defined boundary has sprung up, and in consequence a doubt has been raised as to whether the old mounds should be retained, and the following orders are issued to remove this doubt.

Rule 18.—If there is at present a hedge on the boundary of an old Survey Number, there is no necessity either to erect new mounds or confirm the old ones, but stones must be erected at the bends ; and at the corner a new mound must be erected or an old one confirmed at right angles to the hedge. The following example will show how this is to be done :—



When the Revenue Survey measurements of this number were made there was no hedge on the boundary of this number and mounds numbers 1, 3, 4, 6, 7, 9, and stones numbers 2,

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5, 8, were erected on the boundary. Afterwards a hedge was planted along the line of mounds; therefore, according to the rule above, mounds numbers 1, 9, at right angles to the hedge are to be retained, and stones numbers 2, 5, 8, at the corners and bends are to be confirmed, and mounds numbers 3, 4, 6, 7, are to be cancelled. If there be a hedge or other permanent boundary on two continuous sides of a Survey Number, 3 stones only are to be erected at that corner.

Rule 19.—The first clause of this rule is also applicable to Sar bandhs, but if the height of Sar bandh is less than 1 anna, and the bottom breadth less than 2 annas, the rule does not apply. If a Sar bandh is less than the size given above, it is not to be considered a permanent mark, and boundary marks must be erected according to the rules.

Rule 20.—Measurers must show on the back of their daily reports the number of old mounds confirmed and new ones erected, so that the Assistant may have a check on their work.

Rule 21.—For the future in Revision Survey work if an old mound is a clear full one anna in height, it must be confirmed as full size not requiring repair; and no old mounds requiring repair are to be repaired by this Department. In case any old mounds require repairing, a list of them must be made out and given to the Patel of the village, according to instructions given below.

Rule 22.—When appointing a Measurer to a village he will be supplied with two blank forms,* Nos. 1 and 2. In Form No. 1 the Measurer will enter daily the old mounds requiring repair, and will have a large chunam mark made on them. On Form No. 2 he will copy the entries made in columns 1 to 7 of Form No. 1, which he will give to the Patel, and will obtain his signature in column 8 of Form No.1, acknowledging the receipt of this copy.

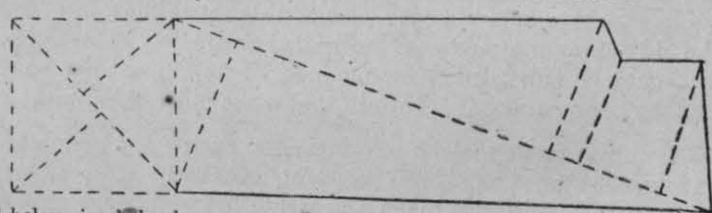
Rule 23.—When inspecting the marks, the Measurers will note whether the confirmed undersized mounds are correct or not, and enter a remark to this effect in column 10 of Form 1, and also in the fair field book. If the mounds which are to be repaired are not all ready at the time of inspection, the Measurer need not inspect the marks again; but when the work of the village is completed he will send in a return showing what marks have not been completed.

Rule 24.—The leaves used for Form No. 1 must be stitched together and sent in to the Assistant with the rest of the papers, on the completion of the village.

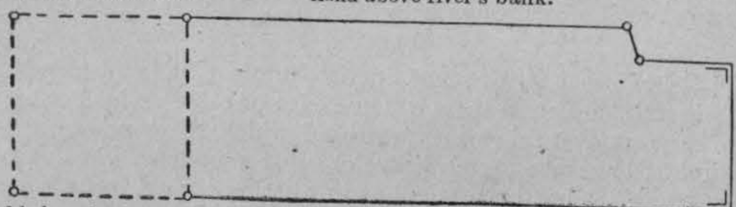
Rule 25.—In districts where the village officers do not understand Marathi, the entries n Forms Nos. 1 and 2 mentioned above must be made in Kanarese.

Rule 26.—Below the banks of large rivers there is land which is covered with water during rains, but it is customary to grow a rabi crop of tur, gram, etc., on this land. When such land is found, the land up to the bank must be first measured, and a separate series of waslas taken to measure the land below the bank.

Rule 27.—Boundary marks must be erected according to the rules on the land above the bank, and stones only erected for the land below the bank, and the boundaries of the land below the bank are to be shown by dotted lines as in the sketch below:—



Land below river's bank. Land above river's bank.



Land below river's bank. Land above river's bank.

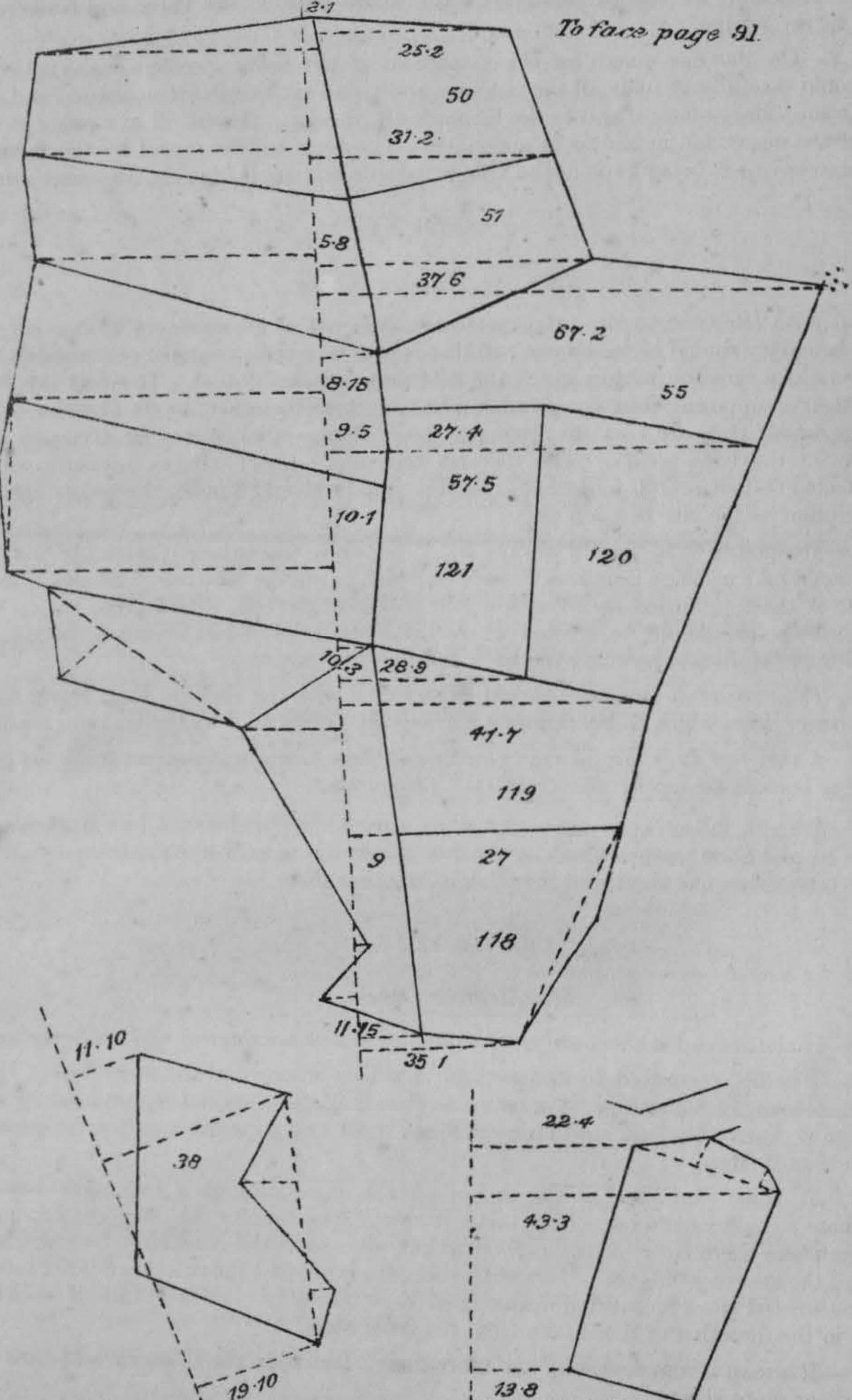
Rule 28.—The above is only applicable to land which is held permanently by the Khatadar of the adjacent Survey number, and where the land is composed of earth, not sand. It does not apply to land in the beds of rivers called "Kharbuz Wadi" which is sold by auction annually: such land is not to be measured.

Rule 29.—When built-up marks erected by the Forest Department are met with, their position should be shown on the maps and field books by a square mark thus □.

Rule 30.—The position of traverse stones should be shown on the maps and field books by a circle crossed thus ⊕.

* The forms being in vernacular are not printed.

To face page 91.



(Vide Chap Viii Rule I)

Rule 31.—Boundary marks are to be of two kinds, earthen mounds and stones, and their dimensions should be as follows:

	Length.	Breadth at bottom.	Breadth at top.	Height.
Mounds ..	5 annas.	$2\frac{1}{2}$ annas.	$\frac{1}{3}$ of an anna.	$1\frac{1}{2}$ anna.

Stones .. From $1\frac{1}{2}$ to 2 cubits ("háths") in length, and not less than (3) three fingers thick; two-thirds of their length must be buried in the ground. Assistants when testing will dig up some stones to see that they are of proper length, and are properly buried.

Rule 32, Clause 1.—A Measurer, before making his periodical inspection of boundary marks while measurement is in progress in the village, should give a clear written notice of his intention to do so at least two days beforehand, and should state in the notice the serial numbers of the fields he intends to inspect, and the names of the occupants. A form* of notice accompanies for information and adoption; the notice should be prepared in duplicate, one copy being kept by the Measurer for record, and the other made over to the Patel and Kulkarni for publication in the village.

Clause 2.—On the day fixed for the inspection of the fields specified in the notice, the Measurer should carefully go over all the numbers and point out each earthen mound and stone separately to the village officers, and to the Khatadar if present. He will fill in a paper showing the result of the inspection in the form appended. The form will be signed by the Patel and Kulkarni, one copy of it being kept in the village records and another in the Measurer's daftar.

CHAPTER VII.

Rules for Traverse Survey.

Rule 1.—With reference to the traverse survey, it is not at all necessary that every bend on a village boundary should be laid down: all that is wanted is such a number of accurately fixed points to serve as a skeleton within which the field map may be plotted. To effect this it will only be necessary, supposing that one point can be seen from the other, to fix the four corners of the village, and if they are very far apart (say more than a mile), it may be necessary to fix one or more intermediate points. The traverse measurer should always measure with an accurately tested 66-foot or 100-foot chain: on this map he should number the points fixed and give a description of the site of each point.

Rule 2.—The points fixed should always be, if possible, the corners (katris) of numbers. Measurers should take up these points as those from which to run the base line. Stones 18 inches long and flat at the top, buried up to within four inches of the top, with a cross cut on them to fix the exact point, should be erected where the boundaries of two or more villages meet together, with two stones, to indicate the back and forward stations.

Rule 3.—The cross staff measurer should be supplied with the skeleton map drawn by the traverse measurer, from which to lay down on his map the points fixed by the traverse measurer.

Rule 4.—A very few days should suffice for two or three traverse measurers to fix the points round villages enough to supply the cross staff measurers.

Rule 5.—When a village is so large that it requires to be divided into two traverses, and it is difficult to plot both traverses on one sheet of paper, the map can be made on two sheets, plotting one traverse on one sheet and the other on another sheet.

CHAPTER VIII.

Miscellaneous Orders.

Rule 1.—In the appended sheet are given examples of how numbers should *not* be measured.

Rule 2.—It is not permitted to measure two numbers on one and the same base. If it is necessary on account of high crops to measure on Bandh Maps, a special report must be made to the Assistant Superintendent, and on no account must two adjacent numbers be measured on the same Bandh Map.

Rule 3.—In these examples, at the end of certain measurements a red mark has been made: if these measurements have been taken from the base line for the purpose of fixing the corners of numbers there is no objection to this, but on no account must they be made use of in calculating the area of numbers. It should be borne in mind that the cross staff is not accurate enough to be trusted when measuring distances of 50 or 60 chains; there will in all probability be an error in the direction of line taken from the cross staff.

Rule 4.—If a map is four feet long and more than 2 feet wide, the Classers' maps are to be made on two or more sheets.

Rule 5.—If the villagers will not supply flag-holders and chain-men they will be supplied and paid for by Government, but whether supplied by Government or the villagers, no Measurer will be entitled to engage more than 10 men.

* The form being in vernacular is not printed.

Rule 6.—When a Measurer is appointed to a village, he will be supplied with printed vernacular forms with heading as shown below : this form must be filled in daily as the work proceeds.

Measurer.	Revenue Survey Number.	Chalta New Survey Number.	Old area.	New area.	Difference.	Percentage.	Remarks.

At the end of this statement an abstract is to be made out in the following form :—

Total Number of Survey Nos.	NUMBER OF NOS. WHOSE DIFFERENCE FALLS WITHIN							
	0.	5 per cent.	6 to 10 per cent.	11 to 15 per cent.	16 to 20 per cent.	Over 20 per cent.	Total of columns 2 to 7.	
1	2	3	4	5	6	7	8	9

Rule 7.—On a village being unavoidably left incomplete, a memo. showing exactly what work remains to be done in each Measurer's Shez is to be immediately made out, and pasted into the last fair field book of each Measurer's Shez and a copy forwarded to the Assistant Superintendent, who should make a point of seeing to this personally.

CHAPTER IX.

Rule for breaking up land into numbers below the minimum size laid down in the Rules.

Rule 1.—Certain limits are laid down in these rules defining the minimum area into which the holdings of Inamdars and Khatadars contained in a Revenue Survey Number may be broken up into new Survey Numbers, but if any Inamdar or Khatadar wishes to have his holding broken up into smaller numbers and is willing to pay for having it done, it can be done on the following terms.

Rule 2.—In the first place he must petition the Assistant Superintendent on stamped paper of the value of 8 annas : the Assistant will then inform him what the cost of breaking up the number will come to according to the rates given below. If the petitioner then brings another stamped paper valued according to the amount it will cost to break up the number, and enters the number, date, and a summary of his petition on it, the Assistant Superintendent will give orders to the Measurer to break up the number according to the wish of the petitioner.

Clause 1.—A form is given how the petition on stamped paper is to be made and how the cost of carrying out the wish of the petitioner is to be shown.

The amount to be charged for breaking up numbers is as follows :—

Clause 2.—Eight annas is to be charged for breaking up a number : in addition to this 4 annas is to be charged for every acre or portion of an acre the number may contain.

Examples.

1. A number contains 10 gunthas, then 8 annas will be charged for breaking up the number, and being under an acre another 4 annas will be charged, making a total of 12 annas.

2. A number contains 1 acre 15 gunthas, then 8 annas will be charged for breaking up the number, and being under 2 acres, 8 annas more will be charged, making a total of one rupee.

3. A number contains 5 acres 2 gunthas, then 8 annas will be charged for breaking up the number, and being under 6 acres, 4 annas will be charged for each acre, amounting to Re. 1-8-0, making a total for the number of Rs. 2-0-0.

Clause 3.—When a Khatadar or Inamdar has brought stamped paper for full amount it will cost to break up his number, the Assistant Superintendent must send him to the Measurer with a written order to break up the number in whatever way the Khatadar or Inamdar may wish to have this done, and report having done so.

Clause 4.—In all cases of new numbers being made under these special provisions, the necessary boundary marks must either be erected by the petitioner within such time as the Assistant Superintendent may direct, or he must agree to pay the cost of their erection by Government.

FORM FOR DRAWING UP THE PETITION ON STAMPED PAPER ALLUDED TO IN RULE 2 ABOVE.

Petition in the name of ———— resident of Moujeh ————, Taluka ————, petitions as follows:—In the above-mentioned village Revenue Survey No. ———— containing 15 acres 20 gunthas, is entered in my Khata. I wish this to be broken up into three (3) numbers as follows:—4 acres and 20 gunthas are garden; this I want to make into one (1) number, and the remaining (11) eleven acres into (2) two numbers. It is understood that I will either, as you may direct, erect such boundary marks in such time as you may order for these numbers, or that the cost of their erection by Government shall be levied from me.

I beg to request that the number may be broken up in the above-mentioned manner.

Date ———— month ———— year.

Signature of Inamdar or Khatadar.

ORDER BY THE ASSISTANT SUPERINTENDENT.

The cost of breaking up the number will be as follows:—

0—8—0 charge for breaking up the number.

4—0—0 charge for 15 acres 20 gunthas at the rate of 4 annas per acre or portion of an acre, Rupees (4) four.

4—8—0

If you will bring stamped paper of the value of Rs. 4-8-0, the charge for breaking up the number, the order to break it up will be given.

Date ———— month ———— year.

Signature of Assistant Superintendent.

PETITIONER TO THE ASSISTANT.

In accordance with the above order I have brought the stamped paper and attached the original petition to it.

Signature of Inamdar or Khatadar.

ORDER BY THE ASSISTANT SUPERINTENDENT.

I have this day entered this petition on my records and given orders to the Measurer to break up the number.

Date ———— month ———— year.

Signature of Assistant Superintendent.

FORM OF REMARK TO BE WRITTEN ON THE STAMPED PAPER BROUGHT BY THE PERSON AGREEING TO PAY THE COST OF BREAKING UP A NUMBER.

I have according to the Assistant Superintendent's order given below my petition No. ———— date ———— month ———— year ———— brought the stamped paper required for cost of breaking up Revenue Survey No. 30 in Moujeh, ————, Taluka ————.

Signature of Inamdar or Khatadar.

CHAPTER X.

Rules regarding entries in Books and Papers.

Rules as to how the numbers are to be entered in the Measurers' books and other Survey papers, and how the old and new Survey Numbers are to be designated.

Clause 1.—The numbers entered in Mr. Pringle's Survey made between 1825—1830 are to be designated "Maji Paimashi Number."

Clause 2.—The present "Revenue Survey Numbers," that is, the numbers measured since the year 1842 up to the present time, are to be called "Revenue Survey Numbers."

Clause 3.—The "Numbers" which are being measured, when they have been entered in consecutive order, are to be called "New Survey Numbers"; and when entered according to the order measured in the field, they are to be designated "Chalta New Survey Numbers."

Clause 4.—A form is given below of how the entries are to be made in the Measurers' and Classers' Field Books. In the present Survey there is no necessity to enter the "Maji Paimashi Number" in the Field Books.

Form of entries in fair Field Book.

Moujeh ______________ Taluka ______________ Zillah

Date 1st November 18——.

Names of persons present when measuring in the field :

1 Mallan Gowda bin Raman Gowda Mulki Patel.
1 Rachapa bin Mallapa Padlihal.
1 Ranoji Anant Kulkarni.
1 Hanma bin Govind Sadalga

" Chalta New Survey Number."—" New Survey Number."

North.

To the ________ of the preceding "Number" Government dry-crop soil Ari Nurid Shet "Revenue Survey Number" as follows :—

"Revenue Survey Number" 10 entire Karda. Harri bin Govind Ramapur present. The above "Number" was measured according to the following Waslas.

Chapter XI.

Orders for Assistants only.

Rule 1.—Officers in charge of measuring establishments are held strictly responsible for preventing any violation of orders, or annoyance to the rayats, in connection with breaking up of Revenue Survey Numbers, and any failure in this respect will most certainly meet with the severest notice.

Rule 2.—In all cases the Assistant Superintendent should in commencing work in a taluka communicate with the Mamlatdar, and induce him to interest himself in getting the required stones supplied, and mounds erected at the cheapest possible rate: as far as is practicable any reasonable suggestions of the Mamlatdar should be attended to.

Rule 3.—In some villages the villagers will not supply chain-men and flag-holders : when this occurs the Assistant must send for the village officers when he is about to commence work in the village, and explain to them that if they will not supply chain-men and flag-holders, they will be supplied and paid for by Government, and their cost recovered from the villagers. He should also communicate with the Mamlatdar, and induce him to use his influence and persuade the villagers to supply flag and chain-men. In all such cases a report detailing what has passed is to be made to the Superintendent. On such occasions each measurer will be allowed 10 men and no more for every purpose.

Rule 4.—There are three courses available for erecting Boundary Marks :—

1st—The people of the village putting them up themselves without payment.

2nd—The people of the village finding a contractor, an inhabitant of the village.

3rd—The employment of a contractor, an inhabitant of another part of the country.

The first of the above plan is the best and where the people will do the work in time, should be adpoted. The last plan is the worst and must never be resorted except where the 1st and 2nd plans have been found impracticable. A report on the subject must be made to the officer in charge of the Survey, whenever it is necessary to resort to the 3rd course.

Every Assistant Superintendent is responsible for using his best endeavours to keep down the cost of Boundary Marks, and where unnecessary expense is caused by his neglect, he has been and may again be required to make it good.

Rule 5.—Assistants will, after receiving the return of unrepaired marks directed to be sent in by the latter part of Rule 23, Chapter VI, forward it to the Mamlatdar and request him to see that the necessary repairs are made.

Rule 6.—In case the number of mounds requiring repair is very great, the Assistant must inspect the marks, and report to the Superintendent whether he considers the bad state of the marks is owing to the villagers not having made the necessary annual repairs.

Rule 7.—In making out the lists of percentage differences referred to in Rule 6, Chapter VIII, all numbers in which the difference is over 5 per cent. must be examined : in many cases by examining the old and new maps it will be found that the difference is owing to streams changing their course or to new roads being made. When this is the case, a remark to that effect should be made in the column of remarks.

Rule 8.—When testing numbers in which there is a large difference should be looked at, and when the difference is large and cannot be accounted for it should be placed beyond all doubt that the new measurements are correct, and a report made to the Superintendent. All numbers tested in which difference between old and new is over 5 per cent. should have the test area shown opposite them, and after the forms have been examined they should be sent to the Superintendent.

SECTION II.

Chapter I.

Rules regarding the partial re-measurement of villages.

Rule 1.—All numbers coming under the following conditions must be re-measured :—

Clause 1.—All old Survey Numbers requiring to be sub-divided in consequence of size, or being held by different Khatadars or Inamdars, or containing Government and Inam land, must be sub-divided according to the existing rules.

Clause 2.—All old Survey Numbers which have been intersected by a made-road since the first survey.

Clause 3.—All old Survey Numbers of black soil of which a stream or river forms the boundary must be re-measured. In red and rocky soils the courses of streams may be assumed not to have changed: should however any change be apparent re-measurement as far as necessary must be made.

Clause 4.—All old Survey Numbers which adjoin the village site, if the corners next to the village are defined by stones, must be re-measured; if by mounds which still exist, re-measurement is not necessary, unless some alteration in boundary is apparent.

Clause 5.—All old Survey Numbers in which the boundary of actual occupation, as defined by boundary marks, differs from the line of boundary shown in the original measurer's books and maps.

Clause 6.—All old Survey Numbers from which land has been taken for public purposes.

Rule 2.—Any other cases not provided for above where re-measurement appears necessary must be reported to the Assistant Superintendent for orders.

Rule 3.—In the case of an old Survey Number not requiring to be broken up, but containing mixed descriptions of land, the rice and garden land only need be re-measured, and the area deducted from the original area. If the dry-crop land be the smaller area the operation should be reversed. All numbers containing rice and garden land must be re-measured in accordance with this rule.

Rule 4.—Old Survey Numbers not requiring re-measurement under any of the above provisions may be confirmed and the map plotted on the measurement in the old measurer's books.

Rule 5.—A full and complete inspection of all boundary marks, of all numbers, whether re-measured or not, must be made and duly recorded in the measurer's book.

Rule 6.—In the present measurer's books all numbers will be entered in their proper places and order, daily, with the usual entries regarding occupants, etc. But as regards unmeasured numbers a remark also is necessary stating that the original measurements are confirmed. The boundary mark sketches and remarks of the numbers will be filled in with the usual detail.

Rule 7.—All Kharab deductions for roads, streams, etc., must be looked to and entered for non-measured, or confirmed, numbers in exactly the same way as for those that are re-measured, and shown in the map as well as in the field books. Measuring officers are requested to give this point their special attention, in order to avoid loss of time at classification.

Rule 8.—In partial re-measurement the record produced must in every point be as perfect as that resulting from original measurement; no point, therefore, of topographical detail or area is to be omitted from any number.

Rule 9.—The area of all confirmed numbers containing more than five waslas must be taken out by the area scale in the rains, and when the result for any number differs more than five per cent. from the original area the calculation must be done from the original measurements, and the correct area recorded. The areas of those numbers containing five or fewer waslas must be calculated in the usual manner.

Rule 10.—The amount of work in unmeasured numbers which a measurer is expected to do in a day may be approximately taken to be—

Clause 1.—Inspection of boundary marks, determining Kharab and all book and map work; 10 numbers a day.

Clause 2.—Re-inspection of numbers in which at first inspection mounds or stones were found missing and had to be replaced; 25 numbers a day.

Clause 3.—Some time must be allowed the measurer for the base line, which is a most important part of this system; 350 chains should be the minimum accepted for one day's work.

Rule 11.—The unmeasured numbers must be shown separately in the measurer's Wardi reports and Mahaiwars, and similarly in the Mahaiwars and Progress report of the Establishments.

Rule 12.—So far as possible numbers should be re-measured and entered in the books in the order of the old shez; this will save much inconvenience and time in the classing office.

Rule 13.—In the form showing the difference between old and new areas (termed the Shekda Patrak), measurers must enter in the column for remarks the reason for measuring all numbers which have been re-measured. As it would take time and space to write a remark for each number in full, it will be sufficient if the number of the clause of Rule 1 which applies, be entered.

CHAPTER II.

Rules regarding Pôt Kharab to be applied in revising all villages settled since December 31st, 1854.

Rule 1.—The same area that has been deducted as Kharab from a Revenue Survey Number at Original Survey shall now be deducted from the new Survey Number or numbers now made of that old Number.

Exception No. 1.—Except when the total area of such new Survey Number or numbers shall be less than the Original Survey area by upwards of 5 per cent. and 10 per cent. respectively, on areas of above and below 10 acres, in which case the Kharab area shall be reduced in proportion as the total area has been reduced. In numbers which under the partial re-measurement system are not re-measured, the old Pôt Kharab area is confirmed with the total area.

Example.—A Survey Number recorded at Original Survey as 50 acres is now found to measure 45 acres, i. e., 10 per cent. less: if the area of Pôt Kharab originally given was 10 acres, it should be reduced at Revision Survey to 9 acres.

Roads and Pathsaris.

Exception No. 2.—Except when an area specifically recorded in the Original Survey books as deduction on account of a road, or a pathsari, is now found to be no longer so occupied but to be available for cultivation, then such area shall be included in the arable area of the Number at Revision Survey.

Rule 2.—When a Revenue Survey Number containing Pôt Kharab has to be split up into two or more Survey Numbers at the Revision Survey and the position of the old "Kharab" is discernible on the spot, a deduction shall be made for each new Survey Number according to the amount of "Kharab" it appears to contain. When, however, the entire number has been cultivated, or where very little Kharab remains, and it appears to be pretty fairly distributed, the area of "Kharab" shall be distributed among all the new Survey Numbers in proportion to the area of each.

Example.—At the Original Survey a Number was 50 acres in area with 10 acres of "Pôt Kharab." It is now split up into 3 numbers, one of 25 acres, another of 20 acres, and another of 5 acres. The "Pôt Kharab" in the case of these new Numbers will be 5, 4 and 1 acre, respectively, if there is no means of differentiating the Pôt Kharab" on the spot.

Rule 3.—To avoid labour in calculating the difference in area (Rule 1, Exception 1) and the proportionate deduction to be made, a Dharsod of 20 gunthas is to be allowed, and thus all fractions of acres avoided.

Rule 4.—The above rules are to be applied to all Numbers by the Measuring Establishment at Revision Survey, and the Classing Establishment will also be responsible to see that they have been followed in the case of all re-classed Numbers.

Rule 5.—In case it shall appear that in any number the area now unculturable exceeds the area which would be deducted as such under these rules, the matter should be referred to the Assistant Superintendent, and by him if necessary to the Superintendent. In the same way any obvious error, clerical or other, in the old record of the Pôt Kharab area should be noticed and corrected.

Rule 6.—When a Pôt Kharab area formerly recorded as a specific deduction on account of a building, well, etc., is found to be now clear for cultivation or actually cultivated, the orders of Government do not stand in the way of its being treated as culturable and assessed, provided that no expense and labour have been devoted by the holder or occupant to make it fit for cultivation. It was not deducted as "Kharab" because the soil was unculturable, but because in its then existing condition it could not be cultivated. Considering, however, the danger of taxing improvements which would arise if all such areas found culturable now were to be treated as assessable, and considering also the small area of such Kharab, it will be better to give the benefit of the doubt to the cultivator and assume that he has brought it into a fit state for cultivation with some appreciable labour and expense. The only exception should be made in the case of roads and paths for which "Kharab" was deducted, and which are now found to be disused and available for cultivation. Such lands need no labour to fit them for cultivation, and should now be brought under the head of culturable and assessed.

Rule 7.—All Survey Numbers found available for occupation but unoccupied at the time of revision classification are to be exempt from the operation of the new Pôt Kharab rules.

Rule 8.—In villages to which the new Pôt Kharab rules are applied it will be necessary to class in each re-classed number that area only which has been hitherto assessed: for instance, on entering a new Number in which by the rules Kharab deduction will be 10 acres, the classer will determine which those 10 acres are to be, placing them in the absence of other evidence in the poorest part of the field, and excluding them from his classification.

Rule 9.—In talukas which now come under the operation of the new Pôt Kharab rules, and in which large Kharab deductions continue to be given after the year 1854, the classers should inspect all numbers which have been broken up by the measurers, and in which the Kharab deduction is large, in order to ensure the proper apportionment of such Kharab deduction amongst the new numbers.

Chapter III.

Rules for dealing with Survey Numbers intersected by Made-Roads, Canals, or Railways.

Rule 1.—In the case of a made-road which has not yet been taken as the boundary of the portions, on each side of it, of the occupied Survey Numbers that are intersected by it, the area occupied by the road having been only deducted as Pôt Kharab from the original total area of each Number, the said portions must be measured now as separate Survey or Pôt Number if the old Survey Number requires for any reason set forth in the Revision Survey Rules to be sub-divided, and their boundaries diverging from the line of the road must be demarcated in the usual manner, but their boundaries formed by the line of the road must not be demarcated except by the agency that constructed the road. Otherwise each intersected old number must have only the area occupied by the made-road deducted from it as Pôt Kharab, and no demarcation of any boundary diverging from the line of the road on either side is necessary.

Rule 2.—Where such a made-road intersects Government Survey Numbers of large area unoccupied at the old survey, and still unoccupied and doubtfully culturable or worth breaking up into new Survey Numbers of moderate size for future occupation, it is not necessary to treat each portion of an intersected number as a separate new Survey Number and re-measure and demarcate it accordingly, but it will suffice to ascertain by measurement the area actually occupied by the road and deduct it from the original total area as Pôt Kharab, and at the same time indicate by dotted lines on the village map the position and line of the road, where it intersects the number, by means of measurements taken along each boundary up to the side of the road. The area of each portion of the old number left on each side of the road can be ascertained by scale, the aggregate areas being made to agree with the total old area *minus* the area to be now deducted as Pôt Kharab.

Rule 3.—In the case of a made-road which has already been taken as the boundary of the portions of old Survey Numbers intersected by it, these portions having been measured by a sufficiently capable agency as separate Survey Numbers, and recorded as such in the village map and other Survey papers, their boundaries which diverge from the line of the road must now be demarcated according to the rule if this has not already been done, while those along the line of the road must be demarcated by the agency that constructed the road. If it is found that these latter boundaries are already demarcated under some previous system, the Survey Department will not interfere with such demarcation either in the way of causing any of the marks to be moved as actually superfluous under the Revision Survey Rules, or requiring the occupants of the numbers to repair any that are seen to be out of repair.

Rule 4.—In the case of old Survey Numbers, occupied or not occupied, intersected by canals or railways, separate Survey or Pôt Numbers must be formed on each side of them where this has not already been done. Each boundary of such numbers diverging from the line of the canal or railway must be demarcated by one stone at the point up to which the right of occupation extends and by one mound showing the direction of the boundary. The boundaries formed by the line of the canals or railways will be demarcated by the agency that constructed these works.

Rule 5.—When a made-road, tank, or canal cuts off from a Survey Number or Pôt Number, a portion so small or so irregularly shaped as to render its cultivation unprofitable to the occupant, such portion should be thrown at the time of Revision Survey into the road, tank or canal, as the case may be: provided that every instance of this kind must be supported by a written statement, to be obtained from the occupant, to the effect that he declines to retain the land, such statement being signed by the occupant and by the village officers and transmitted by the measurer to his Assistant Superintendent together with his report on the matter, in order that, in accordance with the authority noted in the margin, steps may be taken for the acquisition by the responsible department of the portion of land thus rendered useless to the cultivator.

Government Resolution No. 692—C.W., Public Works Department, dated 21st November 1885, and Government Resolution No. 221—W.I., Public Works Department, dated 15th December 1885.

Rule 6.—When a railway has had the effect stated in Rule 5 in the case of occupied Survey Numbers, such small portions shall be acquired by Government in the Revenue Department, and be either made over to the occupants of the adjacent numbers most convenient for their

amalgamation, or where this arrangement is not feasible, be retained by Government for its own use. All measurement and demarcation operations that shall be necessary in either case shall subsequently be carried out in due course by the Revision Survey Department.

Supplement.

Rules circulated under Survey Commissioner's No. S.—860, dated 2nd June 1897.

Rules for dealing with lands in possession of the Railway Company.

I.—Whenever the boundaries of A land are being laid down at Revision Survey, the Measurer shall apply for, and be furnished with, the demarcation plan, and in fixing the boundary shall take it into consideration.

II.—Special notice shall be given to the Railway Company to point out the boundaries of their lands and explain any apparent acquiescence in enrcoachments on the original boundaries.

III.—Special notice shall also be given to the occupants of Survey Numbers adjacent to the Railway, the boundaries of which have to be fixed.

Rules circulated under Survey Commissioner's No. S.—1387, dated 26th August 1897.

I.—When at any survey the boundaries are to be laid down or settled of lands belonging to any Government Department, at least one month's notice shall be given to the Chief Executive Officer in charge of the Department concerned within the limits of the district in which the measuring is taking place. If there be no Executive Officer in the district, the notice shall be submitted to the Head of the Department. If not inconvenient, this notice shall be given early in the recess season in order to allow time for full information to be furnished (not later than 15th October) by the authorities concerned to avoid the chance of delay, and to enable the Survey Officer to foresee and arrange dates on which to meet the delegates from the Department concerned.

II.—The notice shall call upon the Department to supply the Survey Officer with all maps or documents showing the correct location of the boundaries, and to depute an officer or subordinate to attend on the ground, on such date as may be arranged with the Survey Officer. It will state that failing attention to the notice the Survey Officer will proceed to determine the boundaries on such date as may be convenient upon such evidence and information as may be available to him.

III.—Special notice should be given to the occupant of the numbers adjoining the lands belonging to the Department concerned.

Note.—As regards Railway lands, the rules circulated under Survey Commissioner's No. S.—1387, dated 26th August 1897, are to be read with those circulated under his No. S.—860, dated 2nd June 1897, and printed above. Both sets of rules apply to B class as a well as A class lands.

REVISION CLASSIFICATION RULES.*

The result which it is desired to attain by Revision classing operations are (1) to adjust the old classification to our present standard, and (2) to prepare a new Revenue record, which shall show the existing state of the land under heads of its holdings and of the different kinds of cultivation now prevailing.

CHAPTER I.

Re-classification for Standard.

Rule 1.—In order to ascertain what adjustment (if any) must be applied to the old classification to fit it approximately to our present standard, certain old numbers shall be classed afresh in the field, in exactly the same manner in all respects as if for the first time. In carrying this out the following conditions shall be observed :—

Proportion re-classed.

1. Of old numbers of 10 annas and 6 pies classification value and upwards re-class 10 per cent. of first hundred, and 5 per cent. of the remainder.

2. From 10 annas 6 pies classification value downwards, re-class 20 per cent. of first hundred, and 10 per cent. of remainder.

3. Not less than 7 numbers to be re-classed in any village.

4. The re-classed numbers must be fairly distributed between the values 10 annas 6 pies to 8 annas, 8 annas to 5 annas, and below 5 annas.

Broken up numbers, to be selected for re-classification.

Rule 2.—Numbers selected for re-classification should consist entirely, or as far as possible, of old survey numbers now broken up. And all old numbers broken up into more than two new Survey numbers or Pôt numbers should be re-classed. The object of this is to save the time that would otherwise be spent in breaking up the old classification at the time of preparing the registers.

One classer only, if possible, to be employed in each village.

Rule 3.—(1) It is as a generel rule very unadvisable that two classers be employed in the same village. Except in cases of emergency, a single classer only should be employed in one village. When it is necessary to employ two men it is better to put one if feasible on the bagait exclusively, reserving the other for the dry-crop, or one classer may do all the soil classification, and the other all the alluvial classification or the water classification of rice land.

(2) There is always danger of some variation of standard if two classers are employed. This is especially objectionable in one village.

(3) When it is necessary to employ more than one classer in one and the same village indiscriminately on the dry-crop and irrigated lands, both should be well proved steady men, as more likely to work together, and it would be well to name to each the entire work of separate old classers, if more than one has been employed originally.

Best classers only to be put on classification for standard.

Rule 4.—It is important that only the steadiest and best classers should be employed on soil classification for standard at Revision Survey; others may be well employed on other branches of the work.

Rule 5.—If any of the new numbers of one old survey number be re-classed for soil, the remaining numbers must also be re-classed.

Exception.

Excepting if an old survey number be broken up in two new numbers either of which is less in width than one share or row of shares of the old classification, then such new numbers must be re-classed, but the remaining new numbers of that old survey number need not be re-classed.

CHAPTER II.

Re-classification for other resaons.

Lands not hitherto classed.

Rule 1.—(1) All newly formed survey numbers in beds of rivers, etc., and land not classed at all formerly on account of not having been made into survey numbers must now be classed.

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* *Note.*—The Revision Classification Rules are of little use as a source of information on the Classification system as a whole, since they mostly refer merely to operations involving correction in the original work. The system as it stood in 1853 is explained in full detail in "Wingate's Rules" of that date. Considerable changes, however, were made subsequently in his system, which were effected through the circulars issued from time to time by the Superintendents or Survey Commissioners. These have been sufficiently summarised in the Manual itself.

(2) Also all numbers not formerly classed but now entered in the village papers as cultivated must be classed.

(3) Also all numbers much altered either in shape or area must be re-classed.

Garden land.

Rule 2.—All numbers in which there is garden cultivation must be re-classed for soil.

Mal numbers over acre in area.

Rule 3.—Mal land, regarding which the Survey Commissioner's memorandum No. 344 of the 23rd April 1881 was issued and inserted in the Revision Survey Measuring Rules, must now be classified.

New tari lands.

Rule 4.—Numbers in which the new tari area exceeds the old by an acre or more should be re-classed for soil. Numbers in which the tari area, whether old or new, is less than an acre need not be re-classed for soil.

Old tari, now khushki lands.

Rule 5.—Numbers in which old tari has now become khushki, and numbers which have less tari now than formerly not need be re-classed.

Alluvial increase.

Rule 6.—All land to which alluvial increase is applicable must have its alluvial classification done.

Water classification.

Rule 7.—All water classification must be done under all circumstances, as time must have caused many changes on the old water classification.

Five-chain increase.

Rule 8.—The following additional classification is to be placed on all lands, whether irrigated or unirrigated, situated within 5 chains of the banks of rivers and nalas which contain water till the end of December, and on which there would be no difficulty in drawing water by means of budkis or other mechanical contrivances:—

Soil Classification.	Additional Class Increase.
From 1st to 4th	One class, i. e., 2 annas.
Do. 5th to 6th	Half class, i. e., 1 anna.
Under 6th.	No increase.

Old Kharab.

Rule 9.—All numbers in which the old Kharab exceeds ⅓rd of the culturable area must be re-classed; and also all numbers formerly entered as entirely Kharab, as such land might now prove culturable. This does not apply to ranges of hills and numbers assigned to a village for special purposes.

Chapter III.

Treatment of Lands not Re-classed.

Unculturable areas.

Rule 1.—Unculturable areas for roads, nalas, temples, etc., must be confirmed as given by the measurer at Revision Survey in numbers not re-classed, except that wherever he has allowed more than 2 chains breadth for a nala, the classer shall see that such deduction is proper.

Unculturable areas.

Rule 2.—The estimated or measured unculturable areas, etc., of the original survey not provided for in the last rule should be confirmed in all numbers not re-classed.

Rule 3.—In cases old rice numbers in which are now shown narrow strips of khushki (grass or otherwise), the classification of such strips may be taken at one class lower than the adjoining rice land, without re-classification in the field.

Give and take in soil valuation.

Rule 4.—The following dhar sods shall be used in Revision Survey for the bhag annas of both unclassed and re-classed numbers.

(1) In soil classification bhag annas, above 12 annas, for the additional pies the higher half-anna rate is to be confirmed.

Example.

Classification Bhag Annas. As. ps.		Confirmed Annas. As. ps.
13 1	.. ..	13 6
14 1	.. ..	13 6
14 7	.. ..	15 0

(2) In bhag annas, below 12 annas to 6 annas, the give and take for the additional pies to be done as hitherto it has been.

Example.

As. ps.		As. ps.
10 5	.. ..	10 6
10 3	.. ..	10 0
10 9	.. ..	10 6

(3) In bhag annas below 6 annas for the additional pies the lower half-anna rate is to be confirmed.

Example.

As. ps.		As. ps.
5 5	.. ..	5 0
4 1	.. ..	4 0
5 11	.. ..	5 6

Rule 5.—In water classification bhag annas the give and take for the pies over the annas is to be done as follows :—

Give and take in water class.

Classification.

As. ps.		As. ps.		As. ps.
1 0	to	1 2	confirm	1 0
1 3	to	1 8	do.	1 6
1 9	to	2 2	do.	2 0

and so on to the end.

CHAPTER IV.

Records and papers prepared at Revision Classification.

Rule 1.—The classer's field book shows entries for every new survey number in the village in the consecutive order of the Revision Survey numbers, though the field work must be done in the consecutive order of the old survey number as directed in another rule.

The classer's field book. Form A appended.

Rule 2.—(1) For re-classed numbers every information is recorded as in original classification work.

(2) For unclassed numbers plot is shown, with the exceptions noted below, but the old classification bhag annas for numbers not broken up or not of mixed cultivation are entered from the old classers' books, and under them the modification, if any consequent on adjustment for standard or increase for various reasons, is to be shown. For broken up numbers and for numbers of mixed cultivation the old classification for each new number or for each kind of cultivation must be entered in the new classers' books, share by share, from the old classification, and the bhag annas worked out in the usual way, and under this the adjustment for standard or other modification when any is to be shown.

Rule 3.—Of numbers not re-classed plots must be shown :—

(1) Of numbers of tari or of mixed tari and khushki cultivation for the purpose of entering the water classification of the tari land.

(2) Of numbers to which alluvial classification and the 5-chain nala increase or other local increases are applied so that the land to which these are applied may be indicated.

Rule 4.—To elucidate the foregoing instructions examples of entries of a few numbers not re-classed are herewith attached.

Rule 5.—In the Revision Survey work it is necessary to obtain information as to what number of Inamdars or Khatedars cultivate the land themselves, and how many sub-let their land. Information on the following points must, therefore, be entered in the classers' books:—

1st—Does the Inamdar or Khatedar cultivate the land himself?

2nd—Does the Pot Lawnidar cultivate by right of succession ?

3rd—Does the Pot Lawnidar cultivate the land paying rent in money ?

4th—Does the Pot Lawnidar cultivate the land paying rent by a share of the crop ?

5th—If the Khatedar or Inamdar himself cultivate a portion and has sub-let a portion of his number, such number will be entered under the heading to which the greater area belongs. Classers need not enquire for what sum of money or what share of produce the land is sub-let.

Rule 6.—(1) The classer is supplied with blank forms of the bhag anna statement, of which he fills in columns 1 and 7 to 11, and returns each sheet as soon as ready to the Assistant Superintendent. The remaining columns are then filled in, preparatory to test, in the Assistant's office, after which the statement is finally completed, and sent to the Superintendent.

Bhag anna statement Form B appended.

(2) Numbers must be entered in the bhag anna statement in the consecutive order of the old numbers, and as each leaf of the statement gets filled in it should be at once sent in to the Assistant Superintendent.

(3) To enable a classer to act according to the above, classification must proceed in the consecutive order of the old survey numbers, though the order followed in the new classification books must be that of the Revision Survey.

(4) The initial letters appropriate to each kind of cultivation must be entered against the acres both old and new.

(5) Numbers that were waste at the time of the old classification must have their old acres and bhag annas entered in red ink.

(6) Numbers that were occupied at the time of the old classification must have their old acres and bhag annas entered in black ink.

(7) Numbers that are waste at the time of revision classification must have their new acres entered in red ink.

(8) Numbers that are occupied at the time of revision classification must have their new acres entered in black ink.

(9) All re-classification bhag annas must be entered in black ink.

(10) Broken up numbers waste at the time of re-classification and not re-classed must have their bhag annas derived from breaking up the old classification entered in column 11 of the bhag anna statement in red ink.

(11) Alluvial and other increase on the soil classification must be included in the bhag annas entered in column 11 of the bhag anna statement.

The amount of the increase should be shown in the column for remarks.

(12) In cases of error in the old classification books or registers the rate by which the old akar of a number was computed should be entered in column 5 of the bhag anna statement, as it is desired to know what was the old classification rate on which the assessment was fixed. All such cases should be noted in English in the bhag anna statement.

(13) In making out the statement of differences* between old and new classing, for insertion in the bhag anna statement of villages classed for revision, the annas for soil classification only should be entered in column 3. Five-chain and other increase annas should not be entered in that column, but should be shown in their proper place in the body of the statement.

* *Vide* Form C appended.

(14) In cases where the old classification of a village has been done by more than one classer, each old classer's work must be shown in a separate bhag anna statement, with separate recommendations for adjustment, etc.—the whole of the bhag anna statement relating to one village being tacked together.

(15) In the case of two new classers being employed in one village the same plan is to be followed.

(16) When a number has been re-classed, the result of the re-classification is to be substituted for that of the old classification, unless a pencil alteration is made in the bhag anna statement by the Survey Commissioner or the Superintendent. If the re-classification has been tested, the result of the test should be substituted for the old classification.

(17) The bhag anna statement and old classification books should always be in the field with the testing officer. Some of the numbers tested now should be numbers formerly tested, even up to $\frac{1}{4}$ of the numbers now tested.

(18) The remarks on the character of the old classification, as judged from the day's test, should be written, at the time of the test, on the page containing the last number tested that day, and on the completion of the test of a village should that day be written at foot of the bhag anna statement, which should be sent to the Superintendent as soon as it is completed.

Rule 7.—Information regarding garden land must be recorded in a separate field book, and in doing so the following points must be noted in the order given :—

Bagait book. Form D appended.

For Bagait under Wells.

1st—Whether the well was dug before or after the old revenue survey settlement.

2nd—Nature of the well, whether built up or excavated in hard soil or rock (paki) or whether merely excavated in loose soil (kachi). The number of mot-places it has, and the number of these in use. Depth of well to the water from the lift-places, and also from the surface of the ground. The class of the well.

3rd—The old bagait acres as entered in the village papers.

4th—Whether or not the right of irrigation from the well is shared by other numbers, and also if the number under consideration has a right of irrigation from wells in other numbers. In case of division of right to irrigation from a well among several numbers the share of right of each number must be given in sub-divisions of 16 annas.

5th—The crops cultivated in the garden land at the time of classification and the trees growing in it. This must be given in detail for superior and minor crop in the way explained in the rules for the bagait takta.

6th—The acres under yearly and rotation (Salosal and Pherpali) bagait must be stated

For Pathasthal Bagait.

Rule 8.—1st—Information must be given regarding the crops cultivated in such detail as is explained in the rules on the subject for the bagait takta.

2nd—Information regarding the source of pathasthal irrigation and the pat must be given in the way it is for original survey classification work.

3rd—From the examples herewith attached of the entries in the bagait book the above explanation will be made clear.

Rule 9.—(1) Two forms of bagait taktas—one for motasthal and the other for pathasthal bagait—are attached to these rules. The entries required to be made in them will be understood from the following clauses.

Bagait Takta Forms E (1) and E (2) appended.

(2) Form E (1) refers to motasthal bagait and the information required to be entered in it will, in great part, be understood from the headings of its columns. Additional information necessary to be entered in it is as follows.

Motasthal.

(3) In entering the crops in column 14 superior crops must be shown in detail, the area of each kind separately and the total of them should be shown in an anna valuation. The area of the minor crops is not to be shown in detail, but lumped together as a whole. An anna valuation of this area must also be shown.

(4) The distance of the water in a well from the surface must be given in yards. This depth should be shown in column 6.

(5) Whether a number is Government or Inam and its distance in miles from the village should be entered in column 3.

(6) Well position class should be shown in columns 4 and 5.

(7) The headings of columns 8 and 9 should be made to show whether a well was dug before or after the old Revenue Survey, and not as hitherto, before or after the year 1843.

(8) The new survey numbers having a right to water from a well should be entered in column 13, the proportion of each share of such right being in annas.

(9) Bagait Takta Form E (2) refers to pathasthal bagait. The information required to be entered in it will in a great measure be understood from the headings of its columns. Additional information necessary to be entered in it is as follows.

Pathasthal.

(10) In column 6 the area of the superior crops must be shown in detail, and also that of the minor crops and the totals of the two kinds should be shown in separate anna valuations.

(11) Whether a number is Government or Inam and its distance in miles from the village should be entered in column 2.

(12) If the pathasthal bagait has also mot irrigation, the class of the well should be entered in column 9.

(13) The crops that were cultivated in the two years previous to the one in which the revision classification is being done, must be entered in the bagait books and taktas to all pathasthal bagait numbers. The information is obtained from the Pik Pani Patrak of the village papers.

(14) The above information should be entered in the pathasthal bagait takta in the blank space left in columns 3 to 5, as shown in the form of bagait takta attached.

(15) In cases of one old survey number being broken up into 2 or more numbers, all being pathasthal bagait, the information regarding the past two years' crops should be entered only to the first of the new numbers and in the other numbers a note should be written, stating against which number the information has been entered.

(16) By superior crops are meant those requiring irrigation throughout the year, such as sugarcane, turmeric, etc., and all perennial crops, such as plantains, betel vines, etc., and also all orchard crops. Supari and coconut trees also come under this heading. Minor crops are those requiring irrigations for only a few months of the year, such as khapli, sweet potatoes, onions, brinjals, etc.

(17) Areas under supari and coconut trees only and under those trees mixed with other crops must be shown separately as in the example given below. Also the number of supari and coconut trees must be given in detail as shown in the example. Of fruit trees not occupying a continuous area, but standing detatched, the number only is to be given. In doing this the number of tamarind and mango trees must be shown separately, and the number of the other trees lumped together.

(18) Care must be taken to always give the area in a number that is under rotation (Pherpali bagait).

(19) Example:—

		A.	G.
Superior bagait—16 annas.	Plantain, coconut and supari trees mixed ..	1	0
	Betel-leaf vines, coconut and supari trees mixed	1	18
	Coconut and supari trees mixed	1	20
		3	38

Number of coconut and supari trees.

	Large.	Small.	Plants.
Coconut	273	20	7
Supari	224	14	4

		A.	G.
Minor bagait 0 annas	Area of minor bagait	0	0
16 Total Annas.	Total Acres.	3	38

Other Fruit Trees, their Kind and Numbers.

Tamarind 6, mango 31, bullock heart, lime, jack, and guava trees 15

A.	G.	
3	38	area of bagait every year .. ..
0	0	area of rotation bagait .. ..

(20) In cases of the garden land of a number being under both mot and path irrigation, it is not necessary to enter the garden crops in both motasthal and pathasthal taktas. They should be entered only in the pathasthal bagait takta, and a note should be made in the motasthal one, stating that the crops have been entered in the pathasthal bagait takta.

(21) Land in a number irrigated both by mot and by path, if a portion of it is irrigated from one source and not the other, must have the soil classification and area under each source of irrigation shown separately.

All old bagait areas to be shown in Revision classification papers.

(22) All numbers against which bagait of any kind is entered in the original survey papers must be brought into the revision classification bagait books and bagait taktas. In cases where a difference of area exceeding 25 per cent. has taken place in the area irrigated, or in the areas respectively irrigated by path and well, the cause must be explained in a note against such number.

(23) It will be necessary for the Assistant Superintendent to inform the classers from the old classification papers against which old number what area of bagait has been entered at the original survey.

Wells benefited by adjoining Irrigation work.

(24) It is desired to know whether a well is situated in the land below a considerable irrigation work, and, therefore, drawing its supply of water from the sub-soil drainage from the tank bed or canal.

Well classes.

(25) To facilitate distinction it will be advisable to consider all wells below the level and within 2 chains of the tank or canal as 1st class, those within 5 chains but over 2 chains as 2nd class, and those over 5 chains as 3rd class (*vide* Survey Commissioner's No. 1457 of July 11th, 1884).

(26) Wells within 5 chains of a nala that has water till the end of December and having water in them within 5 yards of the surface should be considered as 1st class.

Index.

(27) On the first page of a bagait takta an index of the numbers in it should be made in the consecutive order of the revision survey numbers.

(28) The month in which the water classification was made should invariably be entered on all bagait taktas. This should be entered in English on any vacant space on the first page of the bagait takta, or in the English remarks made by the classing officer, and a shera to the same effect be written in vernacular at the end of the bagait takta above the Assistant's signature.

Remarks by Assistant Superintendent.

(29) A note must be written in English on the 1st page of a bagait takta, stating what has been observed by the classing assistant regarding the general condition of the bagait of the village.

(30) This applies more especially to villages in which there is a large quantity of bagait irrigated from paths, whether derived from streams or tanks. It often appears that the supply of water from these sources is entered as only available for a very few months, perhaps only up to January and February, and notwithstanding large quantities of superior coconut trees are grown, deriving their supply of water from the general dampness of the situation. Whether this bagait appears flourishing or not, is an important fact to note.

(31) In the case of villages with ordinary well bagait only, unless there are some peculiar circumstances which could not readily be learnt from the vernacular statements opposite each number, it will not be necessary to write any English remarks.

CHAPTER V.

Miscellaneous.

Rule 1.—All corrections in classification made by the classing officer at, or as a consequence of, test are to be made in the classer's books at once, and initialled.

Rule 2.—(1) There are three separate modes of applying increased classification to dry-crop land as follows :—

1st—Soil chad which is according to special orders given in regard to each taluka.

Soil Increases.

2nd—Alluvial or flood water classes added to the dry soil classification in the field; on these sometimes additional annas are placed as directed by circular yadi No. 19 of 6th September 1855.

3rd—The increase of classification valuation of land within 5 chains of a stream, on which a budki or other mechanical contrivance for raising water for irrigation could be erected.

(2) Of the above increase Nos. 1 and 3 can be applied to the same land. Nos. 1 and 2 cannot both fall on the same land,—that is, if one is applicable, the other is not to be superadded. Nos. 2 and 3 cannot both fall on the same land,—that is, if one is applicable, the other is not to be superadded. In places where two increases apply, the one giving the higher rate is to be preferred.

Census.

Rule 3.—As the census operations connected with revision settlement will be undertaken by the Revenue Department, the classers are not to prepare any statement in connection with them.

Rule 4.—All information connected with the hawal yadi, as hitherto, be recorded.

Information about mortgages, etc.

Rule 5.—Most particular care must be taken to see that the statements of sales, mortgages and leases appended to settlement reports may be as full and complete as possible. They are worse than valueless if the information is imperfect.

Rule 6.—The following are the points to be alluded to specially:—

1st—In cases of mortgage and lease, who is to pay the assessment should be clearly stated.

2nd—In case of Inam land not only the survey assessment but the actual payment to Government due on the land should be shown.

3rd—When a sum of money is lent on a field the rate of interest should be clearly stated, or the mode in which the lender of the money is to obtain usage for the money.

Rule 7.—All cases in which any property other than the land itself (trees excepted) is included should be omitted from the above return.

Sub-tenures. Form F appended.

Rule 8.—Information recorded under Rule 5 of Chapter IV must be entered in a form according to the following headings, every number of a village being entered under its appropriate heading. From this abstract of the information according to a similar form must be given and attached to the register of the village.

Headings of Form.

1st—Numbers cultivated by Khatedars or Inamdars.

2nd—Numbers cultivated by Pôt Lawnidars by right of succession.

3rd—Numbers cultivated by Pôt Lawnidars by a money payment of rent.

4th—Numbers cultivated by Pôt Lawnidars by a payment of a share of the crop.

5th—Waste numbers.

6th—Unculturable numbers (Parampok).

Tanks.

Rule 9.—Of the forms given at the end of section 12 of the Revenue Survey Rules the last is regarding information required to be written up about tanks. This information must be given in the classer's book, both of tanks occupying entire numbers and those occupying only a portion of the area of a number.

Rule 10.—Information regarding tanks used for pathasthal bagait irrigation and all other tanks is to be given in a separate printed form* according to the headings in it. This form must be attached to the pathasthal bagait takta.

* Form G appended.

Indirect advantages from Irrigation works.

Rule 11.—The attention of the classing officers should be clearly called to the recent orders of Government regarding the enhancement of assessment on lands for indirect advantages received from the construction of an irrigation work, and they should be directed to make notes from enquiry as to whether lands under command of such a work, although not actually irrigated, have appreciably increased in value from the fact of the construction of the work. The information so gained should be embodied in their statistical reports.

Use of the 10th class.

Rule 12.—The use of 10th class must be confined to soil that can never be cultivated throughout. Occasionally, only in a few places where there is a little more soil it may perhaps be ploughed, but the produce could only be used as fodder. Where grass even will not grow the land must be considered worse than 10th class, and deducted as culturable.

Rule 13.—Alluvial increase will in future be applied not only to dry-crop but to garden lands which receive benefit from river flooding.

Rule 14.—This increase for alluvial deposit is not to be held to apply to rice lands. Such lands will never be classed for soil beyond the ordinary 16 annas of the scale.

B.

REVISION MEASUREMENT AND CLASSIFICATION RULES OF THE GUJARAT SURVEY.

GUJARAT REVISION MEASUREMENT RULES.

CONTENTS.

(These rules, revised and corrected, were brought into force from the 1st November 1893.)

B.

CHAPTER I.

Introduction.

1. Scope of revision measurement. Re-measurement shall be confined to—

(1) The breaking up of over-sized numbers.

(2) The separation of clubbed occupancies.

(3) Correction of the field record by recording all changes which have occurred since the original survey and which have not been duly recorded by the Huzur Surveyor.

(4) Correction of errors which have been detected.

2. Prior to the arrival of the Measurers, a statement shall be obtained from the village officers through the Mamlatdar giving the following details :—

(1) List of survey numbers which have been wholly or partially washed away by the flooding of a river or nala.

(2) The formation of new cultivable land along the boundary of a river or nala.

(3) The diversion from one survey number into another of a road or water-course which was originally included in the former as *petha kharabo*.

(4) Numbers in which land has been set apart for public or special purposes.

(5) Changes in the boundaries of village sites made by order of the Collector.

(6) List of numbers in which tanks exist, the water of which is used for irrigation of adjoining numbers.

(7) List of tanks included in occupied numbers over which a common right exists to water cattle.

(8) List of survey numbers in which dry-crop has been converted into rice land, or in which rice land has become dry-crop.

(9) List of numbers or parts of numbers which have since the old survey become alienated or having been alienated have become *khalsa*.

(10) List of survey numbers containing both Government and alienated land.

(11) List of numbers in which there are more occupancies than one separately recognised in the village accounts.

Note.—The words "Head Surveyor" shall be taken to include any officer in immediate charge of a Party.

CHAPTER II.

Breaking up of over-sized Numbers.

Rule 1.—Unoccupied cultivable survey numbers not set apart for public purposes, such as *gaocharan*, shall be broken up as follows, care being taken to make the new survey numbers as regular in shape as possible, and to avoid making three-sided numbers :—

Black soil land.—Numbers over 9 acres and up to 15 acres shall be divided into 2 survey numbers of about equal size ; up to 21 acres into 3 survey numbers, and so on.

M H 1700—28

Goradu land.—Numbers over 6 and up to 10 acres shall be divided into 2 survey numbers of about equal size; up to 14 acres into 3 numbers, and so on.

Rice land.—Numbers over 3 and up to 5 acres shall be divided into 2 survey numbers of about equal size; over 5 and up to 7 acres into 3 survey numbers, and so on.

Rule 2.—In the case of old waste rice numbers where the old embankments still remain, the boundaries of the new numbers shall be made along the embankments and not across them, and in the case of other waste numbers the sub-division should be guided by the lie of the land and convenience of occupation consistently with the provisions of Rule 1.

Rule 3.—Unoccupied numbers of 100 acres or more in area or of less area, where owing to poorness of the soil or increase of surface salts (khár) occupation is not probable, shall not be broken up without the special sanction of the Assistant Superintendent.

Rule 4.—In villages where at the original survey owing to the then sparse population the lands were measured into large numbers, and where now population and cultivation have so increased that it is reasonable to make a more minute division into numbers, the Assistant Superintendent may, under the directions of the Deputy Superintendent, order the breaking up of unoccupied over-sized numbers according to the rules of this chapter, and the separation of clubbed occupancies under the rules of Chapter 3, at the cost of Government, provided all boundary mark expenditure is met by occupants in case of occupied land. If occupied numbers are not broken up according to the rules for the separation of clubbed occupancies, and are still too large for convenient occupation, they may be sub-divided with the special sanction of the Survey Commissioner, at the cost of the occupants, but not otherwise.

Where the lands of such a village are all in the occupancy of one man, his application in writing should be made a pre-requisite to action under this rule, and he should be called on to pass an agreement that he will put up all necessary marks in a reasonable time (to be specified in the agreement), or in default pay all charges incurred.

Rule 5.—If an occupant desires to have a number or numbers in his occupancy broken up into smaller numbers, which will not be broken up under the above rules, and agrees to pay all the expenses necessarily incurred for re-measurement, boundary marks, and paper correction, the number or numbers may be broken up under the general or special order of the Survey Commissioner, in accordance with the procedure prescribed by standing orders, or special orders if issued.

Note.—At present such sub-division is not permitted by the Survey Commissioner, except in very special circumstances, both in order to secure an early completion of revision operations, and because the Circle Inspector staff, to succeed the survey, will at a reasonable interval more properly deal with such cases which are not requisite for revenue purposes, but only affect the convenience of the occupant.

Chapter III.

Separation of clubbed occupancies.

Rule 1.—In existing survey numbers if there are found to be more occupancies than one separately recognized in the village accounts, each separate occupancy shall be made into a survey number if not less than one acre in dry-crop land or half an acre in rice land. If below these areas, the occupancy shall be made into a pôt number and included as such with other similar adjoining pôt numbers to make up a new number of not less than one acre in dry-crop and half an acre in rice. If this is not possible, it shall be included in the most convenient new survey number adjoining.

Note 1.—Such separation of clubbed occupancies shall not be made in numbers which are wholly dry-crop land unless the separation is applied for in writing by the majority of the co-occupants.

N. B.—The note to this Rule shall be applied to all kinds of land, and not to dry-crop land only, from the 1st February 1896 in all talukas of the Surat District except Mandvi, in which taluka it shall apply to dry-crop land only.

Rule 2.—In numbers sub-divided under the last rule, the boundaries of the new survey numbers or pôt numbers shall be fixed according to present occupation (bends up to one anna being neglected). But if it is found that a holder of an alienated number has encroached on an adjoining Government number which is being broken up the original boundary of the alienated number shall be confirmed by the measurer, who shall report to the Assistant Superintendent.

Rule 3.—If in a survey number containing more occupancies than one separately recognized in the village accounts, but not separatly delimitated in the field, all the occupants agree in writing to divide the land and point out the limits of each occupancy, the sub-division of occupancies shall be made at the cost of the occupants.

Rule 4.—If any specified portion of a survey number or pôt number has by decree of a Civil Court come into possession of an occupant it shall be made into a separate survey number or pôt number even though not recognized in the village accounts; but if the decree of the Court has awarded possession for a term of years only, no separation shall be made.

Rule 5.—If in a survey number alienated land is found together with Government land, the alienated land according to the area shown in the " Kaim Kharda " shall be measured into a separate number, however small in area and whether held by the same holder as the Government land or not. The position of the alienated land shall be ascertained by inquiry and examination of the village records. If both kinds of land are held by the same person and if he refuses to point out the position of the alienated portion, the measurer shall report for orders. If the Government and alienated land are held by different persons and if they agree, as to the position of the land, the separation shall be made accordingly. If they do not agree, the measurer shall report for orders. If one person holds alienated land, part under one tenure and part under another, no further sub-division on that account need be made, for the entry in the Kaim Kharda will be adequate evidence of tenure and of area under each tenure.

Rule 6.—If in such a number there is a dividing line in the field between the Government and the alienated land, both being held by the same person, and if on measurement the alienated land is found to exceed the recorded area, the excess shall be deducted and included in the Government land; if, however, it falls short of the recorded area, the excess shall not be made up by the inclusion of any portion of the Government land. If the holders of the alienated and Government land are different and if in the field there is a distinct boundary, the measurement shall be made according to that boundary.

Rule 7.—If in an existing survey number any portion has been authoritatively set aside for special or for public purposes, such portion shall be separated and made into a survey number.

Government Resolution No. 696, dated 27th January 1891.

Rule 8.—If in any survey number there is found to be a burial ground or a tank, the water of which is used for irrigating adjoining numbers or over which there is a common right to water cattle, the portion so rendered uncultivable shall be made into a separate number or pôt number, the occupant of the old number being registered as the occupant of the new number.

Rule 9.—In measuring new survey numbers or pôt numbers outside (bád) waslas shall be avoided if possible, and not more than one new survey number or pôt number shall be measured on one and the same base line.

Rule 10.—In survey numbers, alienated or khalsa land occupied by cotton-ginning factories and spinning mills or made use of for other non-agricultural purposes shall be measured into separate numbers or pôt numbers according to area, in which the compound of the factory, mill, etc., shall be included, and a statement showing these numbers or pôt numbers with their area, furnished to the Collector in view of their being assessed under section 48 (*c*) of the Land Revenue Code :—

Old Survey Number.	Name of Khatedar.	According to Revision Survey.							Name of house-owner.
		Survey Number.	Pôt Number.	Total Area.	Unculturable.			Remaining arable.	
					On account of houses, huts, etc.	On account of other purposes.	Total.		

CHAPTER IV.

Miscellaneous Measurements.

VILLAGE SITES.

Rule 1.—Where a village site has been enlarged by order of the Collector, the measurer shall duly record the alteration unless it has already been fully recorded by the Huzur Surveyor or as directed by the Collector.

Government Resolution No. 3181, dated 23rd April 1883, and Government Resolution No. 8293, dated 12th November 1883.

Rule 2.—Wada Lands.—Where wadas of 10 gunthas or more have not been separately measured, they shall be made into wada survey numbers, whether paying assessment or not. Existing wada survey numbers of less than 10 gunthas in area, whether paying assessment or not, shall not be cancelled, except at the request of the occupant.

Alluvion and Diluvion.

Rule 3.—Survey numbers which have been wholly washed away, and riverside numbers which have been rendered wholly unproductive by deposits of sand, shall be struck off the map, provided they have been relinquished by the occupant. If a number is wholly washed away and the occupant or holder refuses to relinquish it, the circumstances should be reported to the Survey Commissioner for orders.

Rule 47, Land Revenue Code, and Government Resolution No. 733, dated 13th February 1880, and Government Resolution No. 2771, dated 12th April 1886.

Rule 4.—If a portion of a survey number has been washed away and if the portion so lost is half an acre or more and also amounts to one-tenth or more of the area of the survey number, the remaining area shall be re-measured and its area recorded as the area of the number. If the area lost does not come up to both the limits specified above, the number shall not be re-measured, but in numbers less than half an acre, the number shall be re-measured if the loss amounts to one-tenth the area.

Sections 63 and 64, Land Revenue Code. See last clause, section 64, for definition of "Holding" (Land Revenue Code).

Rule 5.—If by alluvial accretion the area of a survey number has been increased by not more than half an acre, the increase also being not more than one-tenth of the survey number, no notice need be taken of it, and no change in the recorded area of that number be made; but if the accretion exceeds in area half an acre and also exceeds one-tenth of the area of the survey number, it shall be made into a separate survey number. If this accretion has already been assessed and its permanent right of occupancy granted by the Collector to any person, that person's name shall be entered as the occupant. If it has not been so assessed and granted in occupancy, and if it is a permanent alluvial accretion and not liable to change by further action of the river or nala, the report shall be made to the Assistant Superintendent for orders from the Collector as to disposal of occupancy right. If the accretion is liable to change or if orders have already been passed that the right to cultivate should be put up to annual auction, no occupant's name shall be entered.

Rule 6.—Should the survey number against which an alluvial accretion has formed or from which loss by diluvion has occurred contain clubbed occupancies which must be separately measured according to Chapter 3, the alluvion or diluvion shall be dealt with under the rules above, when the separation of clubbed occupancies has been made.

Section 46, Land Revenue Code.

Rule 7.—In the above cases if the accretion adjoins an alienated number, it shall be included in that number, provided it does not exceed half an acre and also one-tenth of the area of such number. But if it exceeds either of these limits and is permanent, it shall be made into a separate number, a report also being made to the Assistant Superintendent and by him to the Collector to determine the tenure and ownership. If it is not permanent, it shall be left as kachha bhata, and thrown into adjoining similar kachha bhata, if any.

Rule 8.—All cases of diluvion affecting alienated numbers shall be neglected by the measurers, the holders of such land being left to take such steps as they may think fit.

Petha Kharabo.

Rule 9.—Where under the rules of foregoing chapters existing survey numbers are sub-divided, which contained petha kharabo, the same area shall be still deducted as petha kharabo, as before, even though it has wholly or in part become cultivable. If it can now be ascertained exactly where the old petha kharabo was, for which the deduction was made, it shall be deducted from each new survey number according to the area of petha kharabo, which that survey number contains; but if its position cannot be ascertained the deduction on account of petha kharabo shall be made proportionately from each new survey number according to its area, a dharsod of 20 gunthas being allowed to avoid fractions of acre.

Note.—Rule 9 does not apply to tracts settled before 1855, or to survey numbers found unoccupied by the revision measurers. In such cases the deduction of petha kharabo will not be made by the measurers.

Rule 10.—The petha kharabo area formerly recorded as a specific deduction on account of a building, well, etc., even if found to be now clear for cultivation or actually cultivated, shall be confirmed, but if it was deducted on account of a road or water-course which no longer exists in any survey number, the area deducted shall be treated as cultivable and the petha kharabo cancelled.

Rule 11.—If however by such diversion the road or water-course affects other survey numbers where land is rendered uncultivable, which was before cultivable, the petha kharabo should be measured and deducted from those numbers.

Rule 12.—If any obvious error in the record of old petha kharabo come to notice, it should be corrected, the orders of the Head Surveyor being asked if the measurer is in doubt.

Roads.

Rule 13.—Made-roads, railways and canals which have been constructed since the original survey, but which have not been made the boundaries of survey numbers on either side, should now be so made excepting such portions as pass through large numbers of unoccupied waste, not broken up under these rules, in which cases they should be shown by dotted lines, the survey numbers, whether occupied or not, being divided accordingly. And if such numbers contain clubbed occupancies, the separation of occupancies shall be made according to Chapter 3, even in the case of dry-crop land, and that without any application from the co-occupants.

Rule 14.—Roads which were made the boundaries of survey numbers at the old survey shall in no case be included in new survey numbers.

Rule 15.—The area of the important cart roads used throughout the year, such as those which connect villages or distant fields with the village site, shall be deducted as petha kharabo from all Government numbers through which they pass, and shown in the map by dotted lines, but no petha kharabo deduction shall be made in alienated numbers.

Rule 16.—Where encroachments on a road forming the boundary of a survey number are found in numbers, Government or alienated, which have to be re-measured under these rules, the boundary shall be set back to its original position.

Chapter V.

Boundary Marks.

Rule 1.—When new boundary marks are required by the following rules they shall be of the description and dimensions as below:—

Bandhs.—Length 6 annas, breadth at bottom 2½ annas, at top ½ anna, height 1½ annas.

Note.—Earth shall not be dug within 3 feet of a bandh for material to make it or repair it.

Khunts.—Height 20 inches, of which 15 inches must be buried in the ground. The top of a khunt shall be one foot wide and one foot broad; and the khunt shall be made of 25 bricks and 80 seers of chunam at least.

Stones.—Length not less than 2½ feet and width not less than 8 inches. Half the stone shall be buried in the ground.

Rule 2.—All the boundary marks of all survey numbers which under these rules are sub-divided or re-measured, and these only shall be fully inspected and shown and numbered in the rough and fair field book below the sketch or plot of the number.

Rule 3.—Detail as to the condition of confirmed marks, cancellation of unnecessary marks, and erection of new marks shall be entered below the plot of the number in the fair field book as follows:—

	Bandhs.	Khunts.	Stones.
Old marks confirmed and in repair	Nos. 1 & 4	2	5
Old marks confirmed but in disrepair	„ 3, 8	..	6
Old mounds cancelled and cut in two	„ 7	..	..
Old marks cancelled and removed	„ 13	14	9
New marks erected..	„ 10	11	12

Note.—Bandh below one anna in height shall be entered as out of repair and stones or khunts under the size fixed by Rule 1.

Rule 4.—New stones shall not be purchased where superfluous stones of proper dimensions in the number can be utilized.

Rule 5.—Boundary marks in numbers dealt with at revision which are wrongly placed shall be entirely removed and those which need repair shall be daubed with whitewash. New marks, superfluous marks and old marks out of repair in unoccupied numbers shall be erected removed, or repaired, as the case may be, at the expense of Government, but in occupied numbers, at the expense of the occupant, to whom due notice shall be issued. In his default, the work shall be done by the measurer.

Explanation.—Mounds which are merely redundant but not misplaced and thus showing a wrong boundary need not be entirely removed, but should be cut in two for after-removal by the occupant or village officers as the case may be. Khunts and stones erected by the original survey or subsequently by Government agency, which are redundant, should be entirely removed.

Rule 6.—If the measurer is obliged to leave a village before marks found out of repair by him have been all repaired, and before marks to be newly erected have been all put up, he shall draw up, sign and date a statement in the following form:—

Survey Number and Pôt Number.	New Marks still to be erected.	Old Marks still to be repaired.	In what part of the Survey Number.	Remarks.

This statement will be sent to the Mamlatdar by the Assistant, with a request that it should be returned when the work has been completed.

Rule 7.—New survey numbers made at revision shall be demarcated as follows:—

Main corners, 2 bandhs.

Bends, one khunt, one bandh or one stone.

Exceptions.—(1) Where, owing to the lie of the land or wash of water a bandh will not remain at a main corner, the corner may be demarcated by one khunt or three stones as the occupant may choose. This exception shall also apply to rice numbers below one acre in area.

(2) Where the boundary, whether it be a village boundary or not, or the boundary of the village site or not, is defined by a good hedge the bends need not be demarcated, but the main corners must be, a portion of the hedge being removed if necessary to make room for the marks. If a number be bounded by a road, the bends shall be demarcated even though the boundary be covered by a hedge. This exception shall not be acted upon without special orders of the Head Surveyor to be obtained generally at test if it affects all the marks of a number or the marks of several numbers together.

(3) In rice land where the embankments sufficiently define the boundary, bends shall not be demarcated. In dry-crop land bends of 1 anna and under are not to be demarcated.

* *Note.*—Marks on bends or along the boundary which are not required by the rules need not be removed unless misplaced.

Explanation.—Nothing in this rule shall debar an occupant from claiming to erect a permanent mark of stone and mortar in lieu of a bandh. (Government Resolution No. 8767, dated 13th December 1886.)

Rule 8.—New pôt numbers in dry-crop land shall be demarcated, the main corners by one khunt or three stones at the main corners, but in rice land one khunt or one stone only shall be placed at each end of the main base line, unless at those points marks already are in existence. This rule is to be applied only at the requisition of occupants or holders.

Rule 9.—Roads.—At the main corners of survey numbers which touch made-roads, railways or canals, one mound only shall be erected and so placed as to indicate the line of boundary of the number. For the mound a khunt may be substituted under the conditions specified in Exception 1 of Rule 7.

Rule 10.—Bends in the boundary line of roads which have been observed as the boundary of survey numbers shall be demarcated by one stone or khunt even though there be a hedge; but no demarcation will be necessary if the boundary is demarcated by a rice embankment.

Rule 11.—When a road forms the boundary between two villages the bends along the road-side shall be examined and the boundary marks laid down at original survey replaced in their former position if found misplaced. If the bends were not demarcated they shall be demarcated at revision survey.

Rule 12.—In villages where the bend demarcation was not done at the original survey the measurer shall make this demarcation, fixing the boundary in accordance with the provisions of section 119 of the L. R. Code.

Note.—Rules 9 to 12 inclusive.—These rules only apply to numbers dealt with under the Revision Survey Rules.

Rule 13.—If such bend demarcation was done not by the regular measurers but by the village officers or a temporary staff employed after the original survey, then in any number dealt with under the revision rules if it is found that errors have been made they shall be corrected with the written sanction of the Head Surveyor.

Rule 14.—Under the rules if a new mark has to be put up in place of an old one which has disappeared, the provisions of Rule 7 should be applied.

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* The following special Rules are issued to meet the case of villages of the Broach District, the boundaries in which are subject to destruction by floods :—

(1) The Deputy Superintendent will obtain from the Collector lists of the villages in each taluka which suffer annually from floods.

(2) The Deputy Superintendent will then issue a notice in such villages that all occupants who wish to substitute "khunts" for "bandhs" are to have the necessary khunts ready ordinarily by the 1st of November following the notice, or such other date as may be convenient.

(3) The officer in charge of parties working in Broach in the ensuing field-season will arrange to have the substitution carried out under proper supervision for all khatedars in those villages who have khunts ready by the date fixed and for no others.

(4) Prior to the opening of the season the Mamlatdars will submit to the Deputy Superintendent list of the villages in which khunts have been got ready.

Chapter VI.

Measurer's Record.

Rule 1.—In the field books the revision survey numbers are to be entered in the same sequence (Shej) as that of the old survey map.

Rule 2.—When an old survey number has been sub-divided into two or more new survey numbers or pôt numbers, one of these new survey numbers shall retain the original number of the survey number and the rest shall be shown as will be seen from the following example:—

If survey number 10 is broken up into three numbers, the new numbers shall be shown thus, 10 $\frac{10}{1}$ $\frac{10}{2}$.

Rule 3.—Numbers which are not dealt with at revision survey shall be shown in proper order in the new field books, with the serial number and the sketch taken from the old field book, but the usual details shall be taken from the latest Pahani Patrak of the village; but if the old field books have been lost, the number and acreage of the survey number shall be shown as shown in the Kaim Kharda.

Rule 4.—No new village map shall be drawn and in the old map corrections and sub-divisions shall be shown in red ink. From the map thus corrected two copies shall be pricked off in the recess and drawn with black ink throughout, one showing boundary marks and the other not; pôt numbers shall be shown in the margin of the map as near the survey number to which they belong as possible. They shall be drawn on a sufficiently large scale to show them clearly.

Rule 5.—If the changes and corrections in a map are numerous the survey numbers shall be re-numbered entirely in the recess under the orders of the Head Surveyor.

Rule 6.—If a measurer is obliged to leave a village partially completed at the end of the field season, a statement shall be filed under the countersignature of the Head Surveyor by the measurer or measurers, if more than one showing exactly what work in his allotted portion of the village remains to be done.

Rule 7.—Where a whole number has been converted from dry-crop to rice or has deteriorated from rice into dry-crop, the change shall be carefully noted in the rough field book; if only a portion has been converted or deteriorated, a sketch of the number showing its present condition shall be entered in the revision field book and a list of such numbers shall be shown at the beginning or end of the field book.

Rule 8.—Where a portion of a number has thus undergone change the rice area shall be carefully measured and a sketch plan showing the measurements and area shall be shown in the field book; but if such a number has to be sub-divided into new survey numbers or pôt numbers, both the dry-crop and rice land shall be measured and shown separately.

Rule 9.—Measurers and classers shall report, shortly before the completion of the village in hand, the probable date on which new work will be required. No papers of another village shall be issued by the Huzur Office before the receipt of all records of the village previously completed.

Chapter VII.

Special rules for measurement in villages where owing to the loss of the records or other causes measurement de novo *is necessary wholly or in part.*

Rule 1.—The map shall be re-drawn.

Rule 2.—The serial order of survey numbers shall be retained in the field books in accordance with the provisions of the last chapter.

Rule 3.—In no case shall old survey numbers be clubbed together and made into a new survey number; and the old marks shall be utilized to the fullest extent possible.

Rule 4.—The provisions of the previous chapters of these rules shall apply, except where they cannot be applied.

Rule 5.—Where to obtain a correct new map it is necessary to take a base line (*adhar liti*), survey numbers through which that line passes shall be measured from it, but not other survey numbers, though off-sets from the base line to their main corners and bends may be taken.

The position of all survey numbers which at revision survey require to be plotted on the old or new field maps, must be accurately fixed by means of base lines taken from trijunction stones or traverse stations on the village boundary.

Rule 6.—Where the old map is available, new survey numbers and pôt numbers shall be shown according to the provisions of the last chapter.

Rule 7.—The lines of boundary of adjoining villages as measured and mapped at the old survey must be followed as far as possible in measuring a village *de novo*, either wholly or in part. In places where for sufficient reasons existing deviations from the old survey lines have to be confirmed the necessary alterations in the maps of the adjoining villages concerned must be carefully made.

Rule 8.—If in measuring alienated numbers it is found that the areas according to the new measurements differ considerably from those of the old survey, and these alienated numbers include the separate holdings of new subordinate alienees, who pay assessment separately, then the land of each such holding must be measured, but it must not be made a pôt number (as would be done in the case of Government land), nor must it be demarcated.

GUJARAT REVISION CLASSIFICATION RULES.*

CONTENTS.

(These rules, revised and corrected, were brought into force from January 1894.)

CHAPTER I.

Introduction.

1. Where any re-classification is done, it should be done under the original survey classification rules in so far as these are not modified by the following rules.

2. Re-classification shall be confined to—

(1) All jirayat numbers broken up under the revision measurement rules, Chapters II and III, if the field books of the original survey are not in existence.

Note 1.—If the field books are in existence, the classification of the new numbers shall be made from the old recorded classification shares: provided that if this is not possible for any reason, re-classification may be done with the sanction of the Head Surveyor.

2. If the Head Surveyor in re-classing broken up numbers finds reason to suspect bad work elsewhere, he should report for orders.

(2) All jirayat numbers under and up to one acre if the field books are not in existence.

(3) Survey numbers or portions of survey numbers converted since the last settlement from dry-crop into rice or which were formerly rice but are not jirayat.

(4) All old rice numbers or portions of numbers both for soil and water, if the old classification books have been lost; but for water only if they are in existence, the original soil classification being confirmed.

(5) All survey numbers in the Surat District, whether rice or jirayat, which were originally classed as natural bagayat.

(6) All bhata survey numbers.

(7) All numbers classed as bagayat at the original survey, unless there are means of taking off the bagayat kasar, without resort to re-classification.

(8) All survey numbers formed during the currency of the expiring lease out of large culturable waste numbers, which have not been classed at all or which have been only roughly classed at the average classification rate of the old large number.

3. Survey numbers other than those enumerated in the last rule shall not be re-classed whether the old classification field books exist or not. If they have been lost the classification annas deducible from available data shall be accepted and recorded.

CHAPTER II.

Classification of rice lands.

1. Old rice shall be taken to include—

(1) Lands classed as rice at the original survey.

(2) Land which was formerly jirayat, then converted into rice and now found unoccupied.

(3) Land unassessed at the original survey because unoccupied but which would then, if classed, have fulfilled the conditions of rice land.

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* *Note.*—The Revision Classification Rules for Gujarát have the same deficiencies as those of the Deccan Survey, though to a less degree, e. g. the classification system applied to Dry-Crop Land and Old Rice is not to be found therein.

M H 1700—30

Note.—If land classed at the old survey as rice is found, which is unembanked but which grows rice mixed with tur and kodra as vagedu, it shall be classed under Rule 7 below.

2. By new rice shall be understood land classed as jirayat at the original survey, but situated favourably for conversion which has, by the expenditure of private capital, been made into rice beds.

Explanation.—In this rule land assessed as bagayat by a bagayat kasar, and as dhekudiat by a dhekudiat rate, was nevertheless classed as jirayat; and for the purposes of this rule shall be considered as jirayat.

3. Classers shall re-class lands noted by the measurers under Chapter VI, Rules 7 and 8, of the Revision Measurement Rules, provided the excess or decrease is over 2 gunthas in any one place, otherwise it need not be noticed.

4. New rice lands shall be re-classed for soil according to the jirayat scale unless the original soil classification annas are on the record in old classification books or can be deduced from other records; in which case the old soil annas shall be confirmed.

5. An addition on account of position for facility for conversion into rice land shall also be added to the soil annas under the following scale:—

Position Class Rules.

Class I.—Where the land lies below the level of existing rice land or of the dry-crop land in the vicinity and nothing had to be done but to build the embankments in order to catch the rain or other water.

Class II.—Where the land lies on the same level as that of the existing rice land or dry-crop in the vicinity and nothing had to be done but to build the embankments to impound the rainfall.

Class III.—Where the land lies slightly above the level of the existing rice land or dry-crop in the vicinity and some excavation had to be made.

The relative values of these classes are fixed as shown below:—

Class I—4 annas.

Class II—2½ annas.

Class III—1 anna.

If, in lands coming under Classes I and II, any appreciable levelling had to be done, a reduction of one anna in each case should be allowed.

6. New rice shall be classed for tank himayat, if any, under the ordinary rules; but no addition shall be made on account of akasia to the water annas.

7. Vagedu rice lands shall be classed for soil according to the jirayat scale; and for water, provided that for akasia 4 annas and for tank assistance, if any, 2 annas shall be the maximum annas allowed. The entries in the field book shall be as follows:—

15
———
7½

R : 4
T : 2 — Vagedu rice.

1¾ 2

8. Land coming under the description of vagedu rice, which was not classed as rice at the former survey, shall not be re-classed, but shall be left as jirayat.

9. Tank himayat annas placed at the original survey on old rice numbers for assistance from a low-lying waste number which becoming a tank in the rains supplied water for irrigation, shall be taken off if the tank number has become unconditionally occupied.

10. Conversely where low-lying occupied numbers have become Government waste and now supply water for irrigation in the rains, the survey numbers irrigated shall be classed for himayat, the tank number being entered as unassessed (bin akari) waste.

11. Cases in which an occupied number which is a tank in the rains is occupied at a reduced assessment on the condition that it should not be cultivated till the rabi season shall, as found, be reported for special orders.

12. Government rice lands irrigated from tanks in alienated lands shall not be classed for himayat, but himayat for assistance to alienated rice numbers from tanks in Government lands shall be assessed.

13. *Bheja rice lands.*—Where, on rice land, a second crop of val, divela, etc., is grown without tank or other kind of irrigation, an addition up to two "gûns" (4 annas) shall be made to the soil annas, if the second crop is taken thus annually. If it is grown less frequently the addition should be of one "gûn" or half a "gûn" only.

Explanation I.—This rule is only to be applied to tracts of heavy rainfall, damp climate and retentive soil.

II.—If the soil is saltish the addition otherwise allowable shall be halved.

III.—If tank himayat is assessed for second crop, the rule shall not be applied.

Chapter III.

Special rules for the classification of lands in the Surat District which were classed at the original survey as natural bagayat.

1. All lands in the Surat District which were classed at the original survey as natural bagayat and which fulfil the conditions given below shall be designated in the classers' books as U. B. (i. e., Uttam Bagayat).

2. Land which fulfills all the conditions of natural bagayat should be classed as "Uttam Bagayat" under this chapter even though not so classed at the original survey.

Note.—Natural bagayat rules apparently were not formulated till after the Chorasi classification was completed.

Description.

(1) *Soil.*—The soil must be superior order soil, i. e., fine rich reddish and occasionally reddish brown loamy mould found both inland and on the banks of rivers which grows with irrigation, sugarcane, in rotation with plantains, ginger, turmeric, yams, etc.

(2) *Water.*—There must be easy facilities for irrigation with perfectly sweet water from kacha or pakka wells. Only where both these conditions are satisfied shall any land be dealt with under this chapter.

2. Natural bagayat may be either kyari or jirayat, that is, it may or may not have been converted into rice beds. The soil should be classed by the usual scale for soil of superior order, the lowest scale in the grade being 16 annas, but rising as high as 24 annas by the addition of "gûns" (or advantages) according to its quality. It may also be reduced by faults to 14 annas, but if reduced by faults below 14 annas, it shall be classed not as superior order soil but as ordinary gorat, and will not be classed as Uttam Bagayat, however great the facilities of irrigation may be.

3. *Definition.*—Superior order soil is that which on its merits would be classed above 16 annas and the classification of which is only reduced below 16 annas by reason of sloping surface or liability to be swept over by running water. If any other faults exist the land cannot be classed as Superior Order.

4. Natural bagayat which is also rice land shall be classed for water, that is, for akasia up to 8 annas and for tank himayat up to 8 annas as in the case of ordinary rice, save that no addition shall be made on account of tank himayat for the growth of a second crop after rice.

5. For sub-soil water natural bagayat shall be classed according to the scale given below:—

Soil annas.	Order I. Sweet throughout the year.		
	A	B	C
	10 feet and less.	Over 10 and up to 20 feet.	Over 20 and up to 30 feet.
20 annas and above	12	9	6
16 annas and under 20 annas	8	6	4
14 annas and under 16 annas	6	4½	3

6. *Caution.*—At the original survey land was classed as natural bagayat which does not fulfil the conditions now laid down and indeed not those laid down at the time, thus rice land with black soil was wrongly treated as natural bagayat and land which was irrigated from wells as deep as 45 or 50 feet was also wrongly classed as natural bagayat. Classers are cautioned not to repeat these mistakes, and where land which does not fulfil the conditions of natural bagayat, as now laid down was before classed as natural bagayat, the classification should

now be corrected and the land should be re-classed under the ordinary rules, for soil as well as for water. This will not hinder the treatment of the soil as superior order, if it can be properly so classed, but if water is obtainable only below 30 feet, or is not perfectly sweet throughout the year, the land cannot be treated as Uttam Bagayat (U. B.).

CHAPTER IV.

Special rules for the classification of Bhata lands.

Description.—Bhata land must be carefully distinguished from natural bagayat. It is a deposit of silt which may be mixed with sand on the permanent shelving bank of a river or stream which may or may not still be increased at the time of high floods. Or else it is a part of the bed of a river left dry and fit for cultivation by a change in the course of a river. It often grows valuable crops ordinarily grown with irrigation, without artificial watering, and that even where the sub-soil water is salt. But its value is greatest where sweet water can be easily obtained from kacha wells. Pakka wells are seldom built in bhata on account of the danger of their being washed away. It is either permanent (pakka) or liable to further change (kacha).

Rule 1.—The soil of bhata land, owing to frequent excess of sand, cannot be classed under the rules for superior order soil. It shall be classed under the ordinary soil classification rules. But if bhata is still improved by new deposits of silt, the soil annas fixed in the classification may be raised by 2 or 4 annas by the addition of "gûns" according to the frequency and value of the new deposits.

Rule 2.—All land classed as bhata at the original survey, and all bhata formed since the date of that survey shall be examined by the classer.

Rule 3.—Land deducted as Petha Kharabo in bhata in permanent occupation at the original survey, on account of excess of sand, shall not be treated as Petha Kharabo, but shall be re-classed on its merits, faults being given for excess of sand, but if the excess of sand is so great as to render the land unfit for cultivation the occupant may be given the option of resigning the area so affected, in which case it shall be made into a separate unassessed number or included with adjoining bhata.

Rule 4.—Where bhata is liable to change in area or where boundary marks are liable to be washed away, it shall be left unclassed and unassessed; but if such (kacha) bhata is already in permanent occupation and the occupant will not resign it, its old classification shall be confirmed: or if that cannot be ascertained, it shall be classed on its merits.

Rule 5.—Land which is adjudged to be bhata shall be so classed even though classed as jirayat at the original survey.

Rule 6.—Land which is bhata shall not be classed as dhekudiat, even if sometimes or regularly irrigated by dhekudis.

Rule 7.—Land which fulfils the conditions of natural bagayat shall be so classed and not as bhata.

Rule 8.—For sub-soil water, bhata shall be classed according to the scale laid down for the sub-soil water classification, Chapter V. The first and second orders of water only shall be applied to bhata, and only Classes A and B in those orders. But the classification annas of the scale in Chapter V when applied shall be doubled.

Rule 9.—Though by Rule 8 no addition for sub-soil water be made, the land of bhata will still be so entered in the classification books with reason why the sub-soil water annas have not been applied.

CHAPTER V.

Rules for classification of sub-soil water.

The sub-soil water of culturable land varies in quality considerably from perfectly sweet to salt and quite undrinkable. For purposes of classification it may be considered in the four distinct orders described below.

Order I.—Quite sweet throughout the year. Used for raising the most valuable descriptions of garden produce.

Order II.—Sweet at the commencement of the season and for as long as the crops need irrigation; also slightly brackish but quite drinkable and continuing so throughout the year. Used for valuable garden crops generally and also for other rather inferior descriptions.

Order III.—From the first almost undrinkably brackish and becoming still more so as the hot season approaches. Used for wheat and barley crops only.

Order IV.—From the first so brackish as to be undrinkable and turning to salt later on. This description of water possesses no advantages when applied to purely jirayat fields, for its effect is to reduce or destroy the fertility of the soil for a time which may extend from one to five years. It shall therefore not be classed when occurring in dry-crop lands. When found in rice lands, however, it should be classed, for not only is salt water as a supplement in years of short rain beneficial, but any excess of surface salt which its use may induce is washed away by the rain. Moreover, saltish land as well as brackish water are both useful for rice, wheat and barley crops, the last two of which are grown as second crops in rice lands with its aid.

2. The order in which water shall be classed must be based both on the quality of the water as found by tasting and on the character of the crops hitherto grown with its assistance.

3. Where in any tract in a village which is well defined and of uniform character of soil, the sub-soil water is shown by that of the wells existing in it to be of uniform quality, every survey number in the tract, though as yet without a well, shall have its sub-soil water classed in the same order as that of the survey numbers which have wells.

4. But where the water in a tract is not of uniform quality, the wells being of different orders, the numbers without wells shall be classed for sub-soil water according to the lowest existing order. The guiding principle of this rule is that in the absence of exact knowledge, the benefit of the doubt must always be given to the cultivator.

5. If it is found in any village or well defined tract that the cultivated lands are entirely of black clayey soil growing as a rule only " Chassia " wheat crops or cotton, and that the only wells existing are on the banks of the tanks and used for drinking, irrigation from wells being unknown and unpractised, none of the lands of such village or tract shall be classed for sub-soil water advantages.

6. Survey numbers of any order of soil of an average soil classification value below five annas shall be exempt from classification for sub-soil water advantages.

7. Should a survey number be met with, with soil so sandy for a considerable depth from the surface that wells are impracticable owing to the soil constantly falling in, this fact being not merely alleged but established by instances of unsuccessful attempts to make wells on or near that number, it shall not be classified for sub-soil water advantage.

8. The classes in each order are to be regulated by the several depths from the surface of the field to the surface of the water and these depths have been fixed as shown below :—

Depth to sub-soil water.

Up to 10 feet	..	.. ..	Class A.
Over 10 and up to 20 feet		.. ..	Do. B.
Over 20 and up to 40 feet		.. ..	Do. C.

All lands in which the depth to sub-soil water is beyond the maximum number of feet fixed for Class C shall be exempt from classification for sub-soil water advantage. The depth to water shall be taken as the depth in February. Special arrangements will be made for ascertaining the depth of the water in February if the classing is done either before or after.

9. The feet for depth to water in a survey number which has a well in it used for irrigation or drinking purposes, being ascertained by measurement, those to be recorded for the survey numbers next adjoining and other numbers in the same tract having no wells, shall be fixed with reference to the difference in level, if any, between it and the irrigable area in each of these numbers.

10. In a level tract where there are several wells close to each other the feet for depth to water of adjoining and other numbers is to be ascertained by adding the depth to water in feet of each well and dividing by the number of wells.

11. Sub-soil water annas are to be added to the soil annas even if those already include increases (gûns) for other natural advantages.

12. The relative anna values of the orders and classes are shown in the scale appended :—

Soil annas.	Order I. Sweet throughout the year.			Order II. Slightly brackish, but drinkable.			Order III. Brackish, undrinkable.			Order IV. Brackish and undrinkable and becoming salt.		
	A.	B.	C.	A.	B.	C.	A.	B.	C.	A.	B.	C.
	10 feet and less.	Over 10 and up to 20.	Over 20 and under 40.	10 feet and less.	Over 10 and up to 20.	Over 20 and under 40.	10 feet and less.	Over 10 and up to 20.	Over 20 and under 40.	10 feet and less.	Over 10 and up to 20.	Over 20 and under 40.
20 annas and above ..	6	5	4	5	4	3	4	3	2	1	½	..
16 annas and under 20 ..	5	4	3	4	3	2	3	2	1½	1	½	..
12 annas and under 16 ..	4	3	2	3½	2½	1½	2	1½	1	1	½	..
8 annas and under 12 ..	3½	2	1½	2½	1½	1	1½	1	½	1	½	..
5 annas and under 8 ..	2½	1½	1	1½	1	½	1	½	..	..	..	..

Note.—1. A fault (half the addition) to be given to rocky substratum or other obstacle to construction of well ; and a similar fault for deficiency in supply.
2. Order IV to be applicable to rice lands only.
3. In rice land the addition required by the above scale is that which is applicable to the soil classification annas doubled.
4. If water is slightly chopdu or bhandaru but still used for irrigation, the annas of the next lower order shall be applied.

C.

REVISION MEASUREMENT AND CLASSIFICATION RULES FOR THE KONKAN (WITH THE SPECIAL RATNAGIRI RULES).

KONKAN REVISION MEASUREMENT RULES.

CONTENTS.

CHAPTER I.

Rice Land.

1. By rice land must be understood land which produces rice, is level, or situated low and embanked so as to retain sufficient moisture for rice crops to be grown usually on it. Land in which rice is sown occasionally with a sloping surface situated on high lands with no embankments and which produces rice only occasionally must not be considered rice land.

2. The boundaries of all old rice, garden, or rabi survey numbers must be examined and new boundary marks erected only where required by the rules under Chapter VI.

3. If from inspection of the field sketch of any such number it is seen that there are one or more pieces of pôt varkas of 5 gunthas or more in area, compact and in one block, each such piece of pôt varkas must be examined. If it is evident that any such piece has been converted into rice or garden to the extent of 5 gunthas or more the navkird must be measured and dealt with according to the rules (Rule 6). But if the difference (over 5 gunthas) between the recorded area and that found now existent is due to mistake in the old work and not to conversion, it must be corrected by re-measurement of the pôt varkas only, if possible, or of that part of the survey number which it is absolutely necessary to re-measure.

All small pieces of pôt varkas which are under 5 gunthas each in area, although the aggregate sum of them may be over 5 gunthas, need not be examined.

4. If in examining old survey numbers as above or in plotting the examined numbers it is found that the old measurement is incorrect, the number should be re-measured wholly or in part, but only, so far, that it may be correctly plotted.

5. It is not necessary to examine or demarcate pôt numbers in confirmed survey numbers, but if any survey number is re-measured under the last rule, the position and area of the pôt numbers must be verified, so that they may be correctly plotted, old boundaries being kept intact as far as possible. If, however, the occupant of any pôt number claims to have his pôt number demarcated by boundary marks, the demarcation shall be made according to the boundary laid down at the original survey.

If that boundary be found incorrect, or disputed, the Assistant's orders should be taken. All charges for hired labour and stones to be charged to the occupant or occupants claiming demarcation.

6. All newly made rice or garden land measured under Rule 3 if under 10 gunthas in area should be, together with the intervening varkas, if any, added to the old rice or garden pôt numbers to which it may be adjoining if belonging to the same Khatedar, but should be made into separate pôt numbers when the intervening varkas is more than one chain wide or two gunthas or more in area or when belonging to a separate Khatedar or to two or more Khatedars in common or if 10 gunthas or more in area. Rice and garden land also must not be included in the same pôt number.

7. New rice or new garden cultivation in an old varkas number adjoining a rice or garden number or near it with only a small strip of varkas not wider than one chain on the average between the two if its area is 5 and under 10 gunthas should, together with the intervening varkas, be measured off so as to be included in the old rice or garden number, and dealt with as laid down in Rule 6, provided the limits prescribed in Rule 14 are not infringed.

8. New rice or garden cultivation other than that described in the last rule in varkas numbers should be made into separate survey numbers subject to the limit given in Rule 9, and subject to the proviso that adjacent pieces of new rice or garden cultivation should, with the varkas between, be clubbed together into one survey number, the size of which should be regulated by the limits prescribed in Rule 14.

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9. No notice of new rice or garden cultivation in varkas numbers need be taken if found in isolated patches under 5 gunthas each which cannot be included in an old number under Rule 7, or made into new number under Rule 8, but a remark should be entered in the field book indicating the existence of such neglected patches.

10. When two old rice or garden survey numbers are adjoining, and the lands on each side of the old boundary line are pôt varkas and the bends defining the old boundary are not demarcated in the field by stones, it will not be necessary to fix in carefully from the old measurements the old bends, but the boundaries of the two old survey numbers should now be measured in accordance with present occupancy.

11. When, however, in the cases referred to in the above rule, a stream, hedge, earthen embankment, or any clearly defined division of occupancy has been taken in the old measurements as denoting the boundary between the old survey numbers, the boundary thus fixed of the old survey numbers should not be altered in any way.

12. A "dharsod" of 2 annas is allowable when rice or garden adjoins rice or garden, and a "dharsod" of 4 annas when it adjoins varkas or when varkas adjoins varkas.

13. No new pôt varkas should be included in the rice or garden numbers except where small bends of under 4 annas would make it difficult to plot the bends on the map.

14. In measuring all new rice or garden land, the following limits shall be observed :— (1) No number above $1\frac{1}{2}$ acres shall include more than 6 Khatedars. (2) No number shall exceed 5 acres, i. e., 5 acres of rice, 2 acres of varkas or rabi being counted as 1 acre of rice unless it is one in the occupancy of one Khatedar, when it may be as large as 8 acres. (3) When a number is wholly or partially re-measured under Rule 4, it should be broken up if containing more than 6 Khatedars and if above $1\frac{1}{2}$ acres in area.

15. Embankments in rice fields re-measured under Rule 3, or in new rice fields formed under Rule 8, should be dealt with as follows :—Embankments in rice land of and under 4 annas in breadth and under two gunthas in area should not be measured separately, but included in the rice, unless deducted as unculturable in the old record ; but embankments over 4 annas in breadth and two gunthas or more in area should be measured as usual and shown as pôt varkas unless clearly deducted as pôt kharab in the existing record.

In tracts of Thana similar to Karjat, 6 annas may be substituted for the 4 annas entered in para. 1 of this rule ; but for this special sanction should be obtained when work is first begun in each new taluka in which Revision Survey is ordered.

16. It will not be necessary for the measurer to measure rabi found in pôt varkas or varkas numbers which is not already recorded as rabi in the old survey ; but if the measurer thinks that any land is rabi, he should note the fact and position approximately in the field book for the information of the classers.

17. When new rice, garden or rabi is found in old survey numbers appropriated for forests or grazing or any other public purpose or recorded as Government unoccupied land, such pieces of new rice, garden or rabi should not be measured either separately or included in the adjacent occupied survey numbers, for all such encroachments are unauthorized, and it is a matter for the Collector's decision whether such appropriation of land without permission is to be allowed and given over to the cultivators thereof or not. In all such cases the original boundary of the occupied survey numbers should be confirmed, new boundary marks erected along that boundary, and the encroachment reported to the Superintendent for communication to, and disposal by, the Collector of the district.

18. If village site boundaries are altered in any way since the original survey, the original boundary should be confirmed and the encroachment, whether it be of cultivation on the village site or of the village site on cultivation, should be reported for enquiry and decision by the Collector.

19. All old survey pôt numbers containing mixed descriptions of lands, such as rice, garden rabi, should be re-measured only as far as may be absolutely necessary to divide off and make into separate pôt numbers lands of the different descriptions; whichever description of land is the smallest in area should be measured, and the area deducted from the original area. and where the line of division is easily fixed from point to point of the old sketch, no re-measurement will be necessary and the respective areas of each description of land should be ascertained with the area-comb, to tally with the area of the original whole pôt number.

20. For all survey or pôt numbers re-measured, corrected or altered, a remark should be written in his field book by the measurer, giving the number of the rules under which it has been thought necessary to measure ; and for all survey numbers examined and not altered a remark should be written stating that the original measurements have been confirmed.

21. In Survey numbers in which, owing to a large amount of pôt varkas having been included at original survey, the rice pôt numbers are scattered and have not been fixed in position in the survey number by proper check measurement at both ends of the base lines on which they may be measured, their position must be verified and all mistakes corrected, whether due to incorrect plotting or measurement. This verification may be done by the

classers, as it can be done without expenditure of time, whilst inspection for "dusota" is being carried out measurements in every instance should not be done as minute differences which are not at once apparent at sight need not be noticed, but all large and obvious differences must be checked by measurements and corrected where necessary. All errors detected by the measurers must, however, be corrected by them.

Regarding land occupied by Railways.

22. Land occupied by railways has been divided by Government orders into four classes—A, B, C and D—each of which has been granted on different conditions and for different purposes and therefore lands of each class must be divided off and recorded separately in the Survey Records.

Class A comprises the land occupied by the permanent works of a Railway, including the road, bridges, stations, workshops, etc., and is provided by Government free of cost to the Railway Company. The occupation of this land is so far permanent that it only ceases when the contract of the Railway Company is terminated or surrendered. This land will be shown as an ordinary road is shown on the map, and its area taken out by area-comb.

Class B is also provided free, and comprises land necessary for the execution of the permanent works of a Railway, but not required after the completion of the line, such as land for spoil banks, for extra excavations, for temporary diversions over rivers and for storage of materials pending construction of the line. The occupation of this class of land will be temporary, and some of it has already been returned to Government by the Railway Company. Where this is the case, the land so returned must be divided off from the " B " Class land still in possession of the Railway Company, and be made into separate survey number and recorded as Government waste, the land in possession of the Railway being recorded as "B" Class land in possession of the Railway. " B " Class land must be made into separate survey numbers to the size of which there is no limit, and it must be measured by the cross-staff and chain.

Class C comprises lands which a Railway Company provides at its own cost. Land of this class has in the first instance been taken possession of by Government and handed over to the Railway Company at a fair rental. The Railway Company is, therefore, the Khatedar of land of this description, and it must be treated in the same manner as lands belonging to ordinary Khatedars, i. e., made into separate survey or pôt numbers. " C " Class land must be measured by cross-staff and chain and made into survey or pôt numbers, to the size of which there is no limit.

Class D comprises lands which, being required in consequence of the existence of the Railway, still does not come directly into the occupation of the Company, such as for new roads leading to stations, etc., or diversions or changes of old roads, etc. Such land will be treated under the ordinary rules in force for other lands of the same description.

23. The classification, measurement and demarcation of lands coming under A, B and C Classes has already been carried out by this Department, and consequently the different descriptions of land only require being shown on the village map and recorded in the Survey papers, each in its own particular class. The plans and former measurements are to be taken as the authority for this work, and no deviation from them is to be allowed.

24. No boundary marks are required for " A " Class land which was divided off from " B " Class by iron marks erected by the Railway Demarcation Survey.

25. In " B " Class land, which always lies where it exists at all between " A " Class land and the line of cultivation or occupancy as laid down by the demarcation survey, boundary marks must be erected in accordance with the rules at the corners of survey numbers.

26. The Railway Company have erected or are erecting large stones, coloured red and marked with the letter " B " cut on them, on the boundary of " B " Class land. The position of these stones must be verified from the Railway plans and former measurements, and all encroachments by the Railway on Government land, or by the villagers on Railway lands, must be reported for orders.

27. Land belonging to " C " Class when made into a survey number must have boundary marks erected according to the rules in force; if made into a pôt number, it should be demarcated by a stone at each corner and at each bend in the boundary.

*I.—Whenever the boundaries of " A " land are being laid down at revision survey, the measurer shall apply for, and be furnished with, the demarcation plan, and in fixing the boundary shall take it into consideration.

II.—Special notice shall be given to the Railway Company to point out the boundaries of their lands and explain any apparent acquiescence in apparent encroachments on the original boundaries.

* These rules were issued in 1897 under the Survey Commissioner's No. S.—860, dated 2nd June 1897, and are of *general* application.

III.—Special notice shall also be given to the occupants of survey numbers adjacent to the Railway, the boundaries of which have to be fixed.

(I) When at any survey the boundaries are to be laid down or settled of lands belonging to any Government Department, at least one month's notice shall be given to the chief executive officer in charge of the Department concerned within the limits of the district in which the measure is taking place. If there be no executive officer in the district, the notice shall be submitted to the Head of the Department. If not inconvenient, this notice shall be given early in the recess season, in order to allow time for full information to be furnished (not later than 15th October) by the authorities concerned, to avoid the chance of delay, and to enable Survey Officers to foresee and arrange dates on which to meet the delegates from the Department concerned.

(II) The notice shall call upon the Department to supply the Survey Officer with all maps or documents showing the correct location of the boundaries, and to depute an officer or subordinate to attend on the ground, on such date as may be arranged with the Survey Officer. It will state that failing attention to the notice, the Survey officer will proceed to determine the boundaries on such date as may be convenient upon such evidence and information as may be available to him.

(III) Special notice should also be given to the occupant of the numbers adjoining the lands belonging to the Department concerned.

28. Khanjan lands—

(1) Unreclaimed khanjan land when found in one place should be made into one survey number, however large its area.

(2) Khanjan land which has been given out on special agreement for reclamation, and of which the assessment has been remitted for a certain period which has not elapsed at time of revision measurement, need not be broken up into survey numbers, but measured as a single block and made into one number.

(3) If there are more lessees than one, the land of each should be made into separate survey numbers.

(4) If the period for which assessment of the land has been remitted has elapsed, and the terms of the lease provide for the land coming under survey rates, it should be broken up into numbers of about 8 acres each.

(5) When breaking up such land into survey numbers, the existing embankments and lines of cultivation should be adopted as the boundaries of the survey numbers, and all the land in one place of any cultivators should be included into one number and not parcelled out and included in two or more survey numbers.

CHAPTER II.

Varkas Lands.

1. Varkas survey numbers must be measured by the cross-staff in open country upon base lines fixed between points either confirmed by the theodolite measurer or by points from rice land, of which the position has been verified by the cross-staff measurer himself, but they need not be re-measured throughout, so that their areas can be calculated by trapezia; it will be sufficient that they be measured so that their correct area can be taken off by the area-comb.

2. In country where it is difficult or impossible to measure by the cross-staff, the boundaries of varkas numbers should be fixed by the theodolite.

3. The old boundaries of varkas survey numbers, as far as they can be identified, must be strictly adhered to.

4. Varkas numbers surrounded by rice land need not be re-measured as their boundaries will be accurately defined by those of the rice land.

5. Similarly, where entire varkas numbers in part adjoin rice, re-measurement should be confined to verification of that part of the boundary only which does not adjoin the rice land.

6. In measuring any *new* varkas numbers they must be broken up into survey numbers of the following sizes :—

Flat land near the village sites .. .. From 10 to 20 acres.

Flat land away from the village or cultivated land on the slopes of hills .. .. .. From 20 to 30 acres.

Other lands .. .. .. From 30 to 40 acres.

7. In all varkas lands, when fixing the boundaries of new survey numbers of phalni tukras, a "dharsod" of 8 annas is allowable.

8. All land taken up for forest should be measured off separately according to the boundaries laid down by the Forest Settlement Officer. It should be made into one Survey number, whatever its area, when it is found in one block.

9. Rabi land found by the measurers in varkas numbers should be treated as described in Rule 16 of Chapter I.

CHAPTER III.

Rules for the Phalni of Varkas Land.

1. Culturable pôt varkas of 1 guntha or more in area is to be measured off separately and phalnied according to vahivat, and treated as may be necessary under the rules given in Chapter I as regards inclusion in adjacent pôt numbers, or being made into a separate pôt number; if under 1 guntha no notice need be taken of it.

2. The Phalni measurement of entire Varkas numbers is to be done by the measuring establishments according to the following rule.

3. An application in writing signed by all the registered occupants of the Survey number which is to be phalnied must be made to the officer in charge of the measuring establishment. This application must be in the form annexed to these rules.

On receiving the application the officer in charge of the establishment should satisfy himself that the above two conditions have been complied with; if they have been, he should cause the application to be stamped with a court-fee stamp of the value of one rupee for every Phalni Tukra which is entered in the village papers as below 3 acres. After this has been done, an order should be passed to the measurer to do the Phalni.

4. The measurer on receiving such orders must give notice in writing three clear days beforehand, through the village officers, to all the registered occupants, of the day on which he intends to do the measurements. This notice, after having been signed by or on behalf of all the registered occupants, should be returned to the measurer and by him forwarded to the officer in charge of the establishment.

5. On the appointed day the measurer will do the Phalni according to the boundaries pointed out by the registered occupants unless they fail to appear.

6. It is not absolutely necessary that all the occupants should appear, but a proportion of two-thirds of them may be considered sufficient to afford evidence of the boundaries, and if two out of three are present, the work of Phalni should proceed. Should it appear, however, that the Khatedars present are not unanimous as to the boundaries, or if being unanimous they do not indicate the boundaries of all the sharers, those of absentees included, the measurer should refuse to make any Phalni.

7. In all cases the measurer should, on the evening of the appointed day, send in a report to the Assistant Superintendent, stating whether the Phalni has been made, and if not, for what reasons it could not be carried out.

8. In cases in which, for any reasons other than through fault of the applicants, it is not possible for the measuring establishment to do the work of Phalni, it must be done in accordance with the above rules by the classing establishments.

FORM FOR DRAWING UP THE APPLICATION REFERRED TO IN RULE 3.

Petition in the names of , residents of Mauze , Táluka , who petition as follows:—

In the abovementioned village, Revenue Survey number , containing acres gunthas, is entered in our khatas (but* no division according to our separate shares and usufruct has been made in the field, and therefore), we wish this Number should be broken up and that the share of each occupant recognized in the village papers should be separately measured, demarcated and recorded.

* If no Phalni has been done previously; if it has, these words may be left out.

We all agree to be present in the field when due notice to this effect shall be given us to point out the boundaries of our respective portions, and to consider such notice given through the village officers in every respect the same as if it had been served directly on ourselves.

We all agree that if in showing our boundaries we cannot agree amongst ourselves as regards our respective shares, or if a sufficient number of us are not present on the appointed date to point out our boundaries satisfactorily, no grounds for complaint for not dividing this number according to our application shall be considered to remain to us. It is understood that we will, as may be directed, either erect all boundary marks necessary for the numbers which may be newly made or that the cost of their erection by Government shall be levied from us. Dated this day of of the year.

(*Signature.*)

Order by the Assistant Superintendent.

Only required when any recorded shares are below 3 acres each.

The cost of making the division in the number will be as follows:—

Charge for making separate Phalni Tukras or numbers of shares of Khatedars which are entered in the village papers as below 3 acres each, at Rupee 1 each share—Rs.

If you will bring stamped paper of the value of Rs. , the order for dividing the number will be given.

Petitioners to Assistant.

In accordance with the above orders we have brought the stamped paper and attached the original petition to it.

Order by the Assistant Superintendent on petition and separately to applicants.

I have this day entered this petition on my records and given orders to the measurer to make the division of the number according to the boundaries you may all agree to point out as those of your respective shares; written notice of the date on which the measurer will require you to be present in the field will be given by him to you all through the village officers, with whom you must arrange means to receive such notice, as no complaint of any notice not having been given you will be afterwards entertained.

Chapter IV.

Inam Lands.

1. When inam and Government lands are included in one Revenue Survey number, and the two descriptions of land have a defined boundary, then the inam and the Government land must be divided into two separate Survey numbers, Pôt numbers, or Phalni Tukras, in accordance with Rule 48* of the Vernacular Compilation of Orders.

2. If the two descriptions of land, inam and Government, have no defined boundary, the Mamlatdar should be called upon to define the inam in the field, and measurements made accordingly.

3. If any inam land is found to be divided among sharers whose names are separately recorded in the village accounts, with their share in the inam specified, and they have separate vahivat in the field and can show definite boundaries, then each sharer's land should be made into a separate Survey number, Pôt number, or Phalni Tukra according to the vahivat of the sharers.

4. In some cases inam lands exist which have never been measured off separately, and are recorded in the village accounts only in cash deducted from the total assessment of the khata of which the Inamdar is the Khatedar, land equivalent to the amount thus entered as inam having never been defined or demarcated in the field; in such cases the Mamlatdar must be desired to have the boundaries defined, and measurers should be instructed to measure off separately the land thus set aside as inam.

5. In measuring inam lands, if the sketch, when plotted, corresponds with the sketch of the old Survey number, Pôt number, or Phalni Tukra, and the area obtained by the new measurement is within 3 per cent. of the old area, the new area should be confirmed. If, however, the new and the old areas vary more than 3 per cent., or the sketch of the inam land as now measured does not tally with the old sketch, it will be necessary to verify the old sketch by re-plotting it from the old measurements; and should there be no error in the old sketch, then the matter should be reported for the orders of the Assistant, who will, if necessary, refer it to the Superintendent.

6. If the area of the inam land, as obtained by the new measurement, is less than the area formerly recorded according to the old measurement, or the sketch of the land in the occupation of the Inamdar is smaller, and land which formerly was measured off as inam is either waste or in another Khatedar's occupation, the land formerly measured as inam must be correctly laid down in the field by taking the old base line, and perpendiculars and laying down the old measurements, and the exact amount of inam land as formerly measured should be now recorded as such.

7. If, on the other hand, the inam area is now in excess of what was formerly recorded as such, or the sketch of the land in the occupation of the Inamdar is larger than the old sketch, then the only conclusion that can be drawn therefrom is that the Inamdar has encroached on the Government waste land or the Pôt varkas, and in that case the land formerly measured off

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* This rule requires that the inam land thus separated should be made into a separate Survey number if exceeding 1 acre in area, and if less, into a separate Pôt number or Phalni *Tukra*.

as inam must be laid down correctly as such in the field, and all in excess of that, now in the Inamdar's occupation, should be made into separate Pôt numbers or Phalni Tukras and recorded as Government land in the occupation of the Inamdar.

8. All inam Pôt numbers or Phalni Tukras should, once for all, be clearly demarcated in the field by having stones erected at all the bends.

CHAPTER V.

Rules applicable to all lands.

1. If in any existing Pôt number or Phalni Tukra there are more Khatedars* having separate vahivat than one, the Pôt number or Phalni Tukras must be made into separate new Pôt numbers or Phalni Tukras according to the "vahivat" of each Khatedar.

2. If in existing Pôt numbers or Phalni Tukras there are separate Khatedars having no separate occupation of the land, but they either share the crop or in some other way exercise a joint occupation of the land, in such cases, if all the Khatedars agree to divide the land and point out boundaries of division, new Pôt numbers or Phalni Tukras should be made accordingly.

3. The names of the Khatedars or Inamdars entered in the registers (accounts) of the village only should be now entered to each Pôt number or Phalni Tukra according to present occupancy. No other cultivator or Pôt Lawnidar should have his name entered, nor should his Pôt vahivat be considered in any way.

4. If any portion of a Revenue Survey number, Pôt number, or Phalni Tukra has been made over to any person by a decree of a Civil Court, it must be made into a separate new Survey number, Pôt number, or Phalni Tukra, even if it has not been made into a separate khata; but if the decree of the Civil Court gives the right of holding the land for only a term of years, it is not to be made into a separate new survey number, pôt number, or phalni tukra.

5. When deposits of soil have formed on the bank of streams, rivers, or creeks, if the land so formed has been assessed, and the permanent right of separate occupancy granted to any person by the Collector and so recorded in the village accounts, the land must be made into a separate number, pôt number, or phalni tukra, and the name of the occupant entered. If the right of cultivating the land is put up to auction, a remark should be entered to that effect in the measurers' books, but no name is to be entered, and the land so sold by auction should be made into a separate number, pôt number, or phalni tukra.

6. If any such alluvial land, whether waste or cultivated, adjoins a Government number, and is not of the nature provided in Rule 5, it is not to be made into a separate number, but is to be included in the adjoining Government number.

7. All measuring work which has to be done should be dependent on one or more good base line which should be determined on and marked out in the field on first beginning work (*vide* Appendix A—Base Line), and these base lines should be fixed in on the maps accurately by the theodolite karkuns, and the maps must be plotted thereon. Everything depends on a good base line being taken to work on, and care should be taken that this is not neglected.

8. Made-roads are to be measured as follows:—

(1) Where the road has been already measured as the boundary of survey numbers, the old boundary marks are to be strictly followed.

(2) Where, though not yet measured by the Survey Department, the boundaries of the land taken up for the road are clearly ascertainable from the Mamlatdar, these boundaries are to be adopted.

(3) In varkas lands the boundary marks should be placed at 5 annas' distance from a single gutter or 2 annas from the side of the double gutter.

(4) In rice land, if the rice land extends up to the made-road, the boundary of the number must be made 2 annas from the side of the single ditch.

(5) Where land has been taken up for a made-road, and is marked out in the field by stones, the boundary of survey numbers should be measured up to those stones and no further. In this case paragraphs (3) and (4) will not apply.

(6) When a road, which was measured as such in the former survey, has fallen into disuse and is not made use of, and a new road has been made, the land occupied by the old road may be included in adjacent numbers if now cultivated according to vahivat; if not, half to each number adjacent on either side, or made into a separate Government waste

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* (1) The one or more Khatedars of any Pôt number must be understood to be the one or more individuals whose names are entered in Village Form No. 3 as occupants opposite that Pôt number.

(2) A Khatedar of one or more Pôt numbers in a village is not to be considered a Khatedar in any other Pôt number opposite which his name is not enterded as occupant in Village Form No. 3. [Superintendent's No. 347 of 29th March 1888.]

(3) New rice made in Varkas land when measured should have the name of the Khatedar to whom the Varkas is entered in the Village Form No. III entered as Khatedar and the present occupant of such new rice and as Vahivatdar in the Survey papers. [Appendix to Rule 3 by Vernacular Wat Yadi No. 138, dated 27th March 1888.]

number; but should the traffic still go along the old road, then both old and new roads should be measured as such.

9. When a measurer is appointed to a village he will be supplied with printed vernacular forms, with headings as shown below. This form must be filled in daily as the work proceeds:—

According to Original Survey.					According to Revision Survey.					Difference.						Percentage on Survey Numbers area.
										Decrease.			Increase.			
Survey Numbers.	Pôt Numbers.	Total area.	Unculturable area.	Culturable area.	New Chalta Numbers.	Pôt Numbers.	Total area.	Unculturable area.	Culturable area.	Total area.	Unculturable area.	Culturable area.	Total area.	Unculturable area.	Culturable area.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

At the end of this statement an abstract is to be made out in the following form:—

Total No. of Survey Numbers.	No. of numbers whose difference falls within							
	0.	5 per cent.	6 to 10 per cent.	11 to 15 per cent.	16 to 20 per cent.	Over 20 per cent.	Total of Columns 2 and 7.	
1	2	3	4	5	6	7	8	9

10. Each measurer will be allowed 12 men when hired labour has to be employed for flag-holders and chain-men.

11. The present revenue survey numbers—that is the numbers measured since the year 1852 up to the present time—are to be called "Revenue survey numbers."

The numbers which are being measured when they have been entered in consecutive order are to be called "New survey numbers," and when entered according to the order measured in the field, they are to be designated "New chalta numbers."

12. Village sites should be confirmed, as such, according to the boundaries of the former survey and gaonthan should be written in them on the maps, but they should not be numbered as a survey number.

In case the village site is deserted, and has been so for many years, a reference should be made to the Assistant Superintendent, who will obtain the Superintendent's decision.

13. All maps to be drawn on double scale of 10 chains to an inch.

14. Pardi lands should be dealt with as follows:—

(1) All pardi lands which may be varkas and of or above 5 gunthas in area should be measured; below 5 gunthas should be left unmeasured in the village site.

(2) All Pardi land which may be rabi, rice, or garden land must be measured into Pardi numbers irrespective of area.

(3) Pardi lands should be measured together with the houses and out-houses belonging to one owner as one Pardi number, and out of the total area obtained the proper deduction for buildings, wells, etc., should be made as usual for ("kharab") unculturable.

(4) All Pardi numbers should be demarcated with stones, one at each corner.

(5) In Pardi numbers containing different descriptions of land, such as garden, rice, etc., each kind of land should be made into a separate Pôt number.

(6) Pardi lands should be classed according to their capabilities, the same way as Survey numbers.

(7) By Pardi land should be understood only land surrounding dwellings and houses within the village site; lands outside the village site boundaries are not to be considered Pardi lands.

(8) The sketches of Pardi numbers should be drawn in the Kshetra Book after these of the Survey numbers, and they should be entered at the end of the Suds after the Survey numbers.

(9) As the relative position of Pardi numbers in a village site must be known, after all Pardi numbers have been measured and plotted, the sketch of the village site should be plotted in the Kshetra Book on double scale and the Pardi numbers shown therein as Phalni Tukras are now shown in Varkas Survey numbers.

15 & 16. [As the Rules regarding Pôt kharab are given in Section II, Chapter II, of Appendix C, Deccan and S. M. C. Survey Measurement Rules, they are not printed here.]

17. In the Konkan Districts at the original Revenue Survey, pieces of varkas land were included in the rice Pôt numbers, and being incapable of assessment as rice, these pieces of varkas were deducted as unculturable, leaving only the rice area assessable as rice land. Therefore, the following rules are made for guidance in determining how the old kharab should be confirmed and how apportioned to the Pôt varkas and the several new rice Pôt numbers :—

(1) Where, on comparing the old sketch with the new it appears that some portion of the old sketch which was shown as rice but was really included varkas and has now been marked off as Pôt varkas, the kharab area formerly deducted, should be considered as consisting wholly or in a part of the old included varkas, and in confirming the old kharab the Pôt varkas now measured off separately should be entered as unculturable, and any excess of old kharab over area of new Pôt varkas deducted from the rice area now obtained if such excess of kharab is more than the unculturable now found to exist in the new rice pôt number :

Example.

	Old Survey No.		New Survey No.
	A. g.		A. g.
Culturable rice	4 11	Culturable rice	4 23
Unculturable	1 17	Unculturable	0 2
		Pôt varkas	1 2

Pôt varkas area 1-2 should be entered as kharab and the balance remaining of old kharab 15 gunthas, being in excess of 2 gunthas kharab now found in the rice Pôt number should be deducted from rice area and new number confirmed as:

	Total.	Unculturable.	Culturable.
	A. g.	A. g.	A. g.
Rice area	4 25	0 15	4 10
Pôt varkas	1 2	1 2	..
Total ..	5 27	1 17	4 10

(2) In cases where the area of the new survey number is more than 10 per cent. less than the area of the old survey number, the proportion of old kharab to be confirmed in accordance with areas should first be worked out and then clause 1 applied:

Example.

	Old Survey No.	New Survey No.
	A. g.	A. g.
Rice culturable area	1 20	1 13
Unculturable	0 17	0 2
Pôt varkas	..	0 9
Total ..	1 37.	1 24

Old kharab must be confirmed in proportion to areas thus :

$$1\text{-}37 : 0\text{-}17 :: 1\text{-}24 : x = 14 \text{ gunthas.}$$

Therefore new Pôt varkas 0-9 to be entered as kharab and the balance of the kharab to be deducted 0-5, should be deducted from the rice area as it is in excess of the unculturable now found in the field and new number confirmed as :

	Total.	Unculturable.	Culturable.
	A. g.	A. g.	A. g.
Rice area	1 15	0 5	1 10
Pôt varkas	0 9	0 9	..
Total ..	1 24	0 14	1 10

(3) In cases where the old kharab is less than the area of the new Pôt varkas, the unculturable area now found to exist in the rice Pôt number should be confirmed and the balance of the old kharab, remaining after deducting the new kharab confirmed, should be apportioned as unculturable to the new Pôt varkas:

Example.

	Old Survey No.		New Survey No.	
	A.	g.	A.	g.
Rice culturable area	2	30	2	13
Unculturable	1	4	0	3
Pôt varkas	..	..	1	8
Total	3	34	3	24

Old kharab to be confirmed as fellows :—

3 gunthas now found unculturable in rice Pôt number to be confirmed: balance of old kharab 1-1 to be deducted as unculturable in the new Pôt varkas area and new number confirmed as:

	Total.		Unculturable.		Culturable.	
	A.	g.	A.	g.	A.	g.
Rice area	2	16	0	3	2	13
Pôt varkas	1	8	1	1	0	7
Total	3	24	1	4	2	20

(4) When old kharab has to be confirmed in consequence of its being greater than the present kharab and the old number or Pôt number has now been divided into two or more, the excess of the old kharab must be apportioned to the several new Pôt numbers, in proportion to their total areas and in addition to the new kharab now deducted in the field:

Example.

	Old Survey No.	
	A.	g.
Rice culturable area	4	11
Unculturable	1	17
Total	5	28

	New Survey No.	
	A.	g.
Pôt No. 1.		
Rice culturable area	2	13
Unculturable	0	2
Total	2	15
Pôt No. 2.		
Rice culturable area	1	35
Unculturable	0	5
Total	2	0
Pôt No. 3.		
Rice culturable area	0	10
Unculturable	..	
Total	0	10
Rice Total	4	25
Pôt varkas	1	2
Total area	5	27

In accordance with clause 1, the Pôt varkas area 1-2 is entered entirely as kharab, and the 15 gunthas of old kharab remaining should be divided over the several new Pôt numbers as follows :—

	A.	g.
Old kharab to be deducted in rice land	0	15
New kharab already deducted in rice land	0	7
Excess of old kharab	0	8

to be apportioned in the following proportions :

	A. g.		A. g.		A. g.		A. g.
Pôt No. 1	4 25	:	0 8	: :	2 15	: x =	0 4
Pôt No. 2	4 25	:	0 8	: :	2 0	: x =	0 3½
Pôt No. 3	4 25	:	0 8	: :	0 10	: x =	0 0½

Kharab in the Pôt numbers will thus be confirmed :

	A. g.		A. g.		A. g.
For Pôt No. 1	0 2	+	0 4	=	0 6
„ Pôt No. 2	0 5	+	0 3½	=	0 8½
„ Pôt No. 3	0 0	+	0 0½	=	0 0½

and hence the new Survey number will be :

	Total.		Unculturable.		Culturable.	
	A.	g.	A.	g.	A.	g.
Rice Pôt No. 1	2	15	0	6	2	9
" " No. 2	2	0	0	8½	1	31½
" " No. 3	0	10	0	0½	0	9½
Pôt varkas	1	2	1	2	0	0
Total ..	5	27	1	17	4	10

(5) It must be borne in mind that the above rules apply only to cases in which no record has been kept in the old measurement books of the particulars of the kharab area then deducted. If the entries in the old survey books show in sufficient detail the nature of the kharab, whether given for streams, roads, temples, tanks, etc., and whether for included varkas, such old entries must be accepted and kharab dealt with as ordered in Rules 15 and 16.

(6) Classers should, when examining the kharab confirmed by the measurers, to verify the correctness thereof, ascertain—during the recess—whether in the old classification books there is any record of reasons for deduction of kharab, and, if so, they should correct the kharab confirmed by the measurers wherever necessary as may be required by the rules.

18. In accordance with Government Resolution No. 8036, dated 13th November 1886, forest lands should be numbered in the new Revision Survey maps as follows :—

(1) Where demarcation has been completed and forest numbers have been gazetted all forest blocks should be left blank, that is, not numbered but merely "forest" written in the centre, as is done in the case of village sites, and below the word forest the former Survey numbers comprised in that forest block should be entered as shown in the margin.

Forest.

45—56—57.

(2) Where demarcation has not been completed the forest blocks should not be numbered with the serial number which they would bear if they were not forest, but with the last of the serial numbers after all other new Survey numbers have been numbered in the usual manner; so that when the Forest numbers are gazetted and the new Survey numbers are cancelled in order that the forest blocks may remain blank as in the first case, the cancelling of these new Survey numbers may not upset the serial numbering of all other new Survey numbers. In this case the forest blocks should have written in the centre of them the word "Forest", below it the new Survey number being last in the series, and below that the old Survey numbers comprised in that block as shown in the margin.

Forest.

New Survey Number 261.

150—151—153.

Chapter VI.

Theodolite Work.

1. The theodolite karkuns will be provided with skeleton maps of stations taken by the Topographical Survey, giving the exact position of each trijunction point on the boundaries of all the villages. These skeleton maps should form the base on which all their work must be done.

2. The theodolite karkuns will fix in accurately all the boundary lines from one trijunction point to another, marking off the bends according to the boundary marks now existing in the field.

3. When measuring along the boundary of a village from one old boundary mark to another he should have the village officers and Mahars of that and the adjacent village present with him, and if any small bend in the occupation appears to have been overlooked and should it, after making allowance for dharsod, be such as to deserve notice, he should consult the people of both villages and take the necessary bend, if both villagers agree ; if not, he should report for the orders of the Assistant.

4. In case the boundary line as laid down now, in accordance with existing boundary marks in the field, does not coincide with the boundary line shown in the old map, the matter should be reported to the Assistant, after having verified the correctness of the new work, and the boundary line thus laid down in accordance with existing boundary marks must be considered the true and correct boundary ; whatever error exists being that of the old map, which must be corrected.

5. Theodolite karkuns, if preceding the measurers in the village, should lay down a good base line, or, if more appear necessary, several, which should be marked in the field by a staff being firmly erected and a small cairn of stones made at the foot of it, and the measurer should take all measurements on these base lines ; but if they follow the measurers in the village, they should be careful to ascertain what base lines the measurers have worked on and fix them in on to their map with the theodolite.

6. It will not be necessary for the theodolite karkuns to fix in a number of stations after they have laid down a sufficient number of base lines for the measurers to work on, unless Varkas numbers extend far up on the hills or in ravines, where no base lines can be laid down and where it is absolutely necessary to give the measurers theodolite stations to work on, and in such cases they should, as much as possible, make their theodolite stations at the corners or principal bends of old Survey numbers, and note in their field book which corner or bend they have made stations of.

7. Where villages contain large blocks of forest extending to the boundary, the village traverse should only be made up to the point where the forest begins and then be carried along the forest boundary to the other side of the village just as if the forest land did not belong to the village. The forest portion of the village will be plotted on to the new map either from the topographical sheets or from the old Survey map. It is the duty of the Bombay Forest Survey Party to traverse forest boundaries.

Chapter VII.

Boundary Marks.

1. Boundary marks—that is, earthen mounds, stone cairns, and simple stones—should be of the following dimensions :—

(1) Earthen mounds (Iranis)—

Length at bottom	..	5 annas.
Do. at top	..	3½ do.
Breadth at bottom	..	2½ do.
Do. at top	..	⅓ of an anna.
Height	..	1½ annas.

(2) Stone cairns (Buruj)—

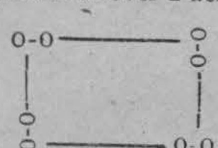
At bottom ..	..	2 annas square.
At top ..	..	1½ do.
Height ..	..	2 annas.

(3) Stones—

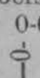
Length not less than 1¼ cubits (haths).
Thickness not less than 3 inches.
Black, hard, and durable stones.

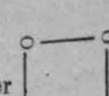
*2. All numbers over 5 acres in area should have 2 Iranis at each corner 

Numbers of or over 2 acres in area, to have 1 Irani and 2 stones at each corner, as shown in sketch



Numbers under 2 acres, but above half an acre in area, to have 3 stones at each corner



Numbers of and under 20 gunthas in area to have only 1 stone at each corner 

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* In rice and garden this rule should not be applied as far as the erection of earthen mounds is concerned. The corners of rice and garden Numbers in area over 20 gunthas should be demarcated by three stones in smaller Numbers by one stone at each corner. In Varkas and other lands where by this rule earthen mounds are required stones may be substituted where the lie of the land or wash of water interferes with the preservation of earthen mounds. [Survey Commissioner's No. 499 of 23rd February 1893.]

(2) The demarcation above directed would be sufficient but for the comparative ease with which stones can be removed and were it not for the intricacy and irregularity in shape of Survey Numbers in the Konkan. To ensure ready identification of numbers and to reduce the danger of wilful removal of stones it is ordered as follows—that (1) in rice and garden Khata at points where two or more Numbers meet one earthen mound shall be erected in lieu of one corner stone to show that spot is a corner, and (2) where rice or garden Numbers project into Varkas Numbers or into forest the projecting corner shall be shown by the substitution of one earthen mound for one of the corner stones. [Survey Commissioner's No. S.—2663 of 16th November 1893.]

3. By corner of a number must be understood the prominent salient angles at the extremes of the number, and as much as possible opposite each other.

All numbers to have four corners, except numbers which are made in shape of a triangle, when only three corners can with justice be said to exist.

4. All the corners of the old survey numbers should not now, as a matter of necessity, be considered to form the corners of the new Survey numbers. This opportunity should be taken to cancel corners made, against all rules, at places where there is hardly any bend, and the angles formed by the sides of numbers are very broad ; but, if possible, it is desirable to confirm the old corners if made according to rules.

5. In rabi and varkas lands on the straight line boundaries of numbers, stone cairns (Burujs) should be erected between the corners when no intermediate marks exist or earthen mounds where stones are not procurable, as follows :—

(1) None, if Bandh map is 12 chains or under.

(2) One about half-way between the corners if the Bandh map is from 12 to 25 chains.

(3) If the distance between the corners is over 25 chains a Buruj should be erected at 12 to 15 chains apart.

6. " Burujs " should be erected only on varkas land, but not on the boundary of rice land which will be marked by stones.

7. " Burujs " should be erected at all the large bends and at all principal salient or re-entering angles of Varkas numbers, which are to be clearly discernible as denoting the boundary of the number.

8. All bends in boundaries of villages should be demarcated by stone cairns (Burujs). Stones should not be used, except where village boundaries run through rice land.

9. Stones are to be erected—

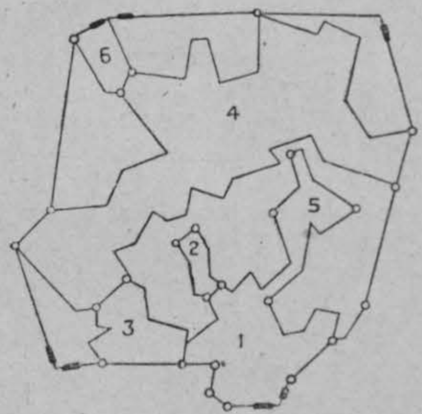
(1) At all bends over 4 annas on the boundary of a rice Survey number, provided that the boundary is not defined by an embankment.

(2) At all bends over 4 annas of rice Survey numbers, even though the boundary may be defined by an embankment of one anna in height where the land on one side the boundary is occupied and on the other is Government waste, forest, village site or land appropriated to any public purpose.

(3) At the four corners of each Pôt number if an application for the demarcation, accompanied with the prepayment of all costs be presented in time by the parties interested.

Survey No. 22,
North.

The mode of demarcating the four corners of Pôt numbers is given in the marginal sketch.



(4) At all the smaller bends of over 8 annas, on boundaries of Varkas numbers which do not require a " Buruj ".

(5) At the four corners of all Pardi numbers of which the bends need not be demarcated by stones.

(6) At all bends of all Pôt numbers or Phalni tukras recorded as inam land of separate occupancy.

10. All stones now erected in the field for the old Survey numbers not required at the corners should be made use of for the bends without any charge being made for them; these should

be used for the bends of the Survey numbers, and not for the pôt numbers, unless some remain in excess of the requirements of the Survey number.

11. At the points of Trijunction of boundaries of villages a stone marked on the top with a broad arrow, should be erected where the trijunction points have not already been marked otherwise.

12. Where, in consequence of sheet rock or only very shallow superficial soil existing in places where stones are required, it is impossible to bury the stones, small cairns or "Burujs" of half size should be substituted, and a remark to that effect written in the measurers' books.

13. All matter of detail with regard to the erection of boundary marks should be dealt with in accordance with No. 18* of the new Compilation of English Circulars.

14. Boundary mark inspection by measurers should, except where measurers will have to measure occupied Nos. of rice, garden, and rabi lands, take place invariably once a week; Saturday of each week should be named for that work, and on sending in the Saturday's Wardi report, if the measurer has not done boundary mark inspection, he should give some good reason for not having done so.

15. As soon as the boundary mark inspection is done, the measurer should prepare his Mazoori patrak and Bandh book at once, — the latter as ordered below:—

(1) The "*Phalni*" of all the boundary marks on the boundary of the Survey number should be made according to the Thana Printed Rules, Chapter 8.†

(2) The total amount chargeable to each Survey number should be divided equally between all the Khatedars or occupants of Pôt numbers or Phalni tukras.

(3) The stones erected at the interior corners of each Pôt number in rice land should be charged to the occupant of that pôt number.

(4) Four stones erected at the interior corners of Pôt numbers should be apportioned by "Phalni" the same as for Survey numbers, to each of the adjacent pôt numbers.

16. Built-up marks erected by the Forest Department should be shown on the maps and field books thus ⊕.

The position of Trijunction points and Topographical Survey stations should be shown thus △.

17. All boundary marks erected for Survey number should be noted near sketch of number in fair sketch books, as shown below, under the following heads :—

For Survey Number.

Ranis ═ 1, 3, 5, 6—total 4.
Burujs ▭ 2, 4—total 2.
Stones ○ 7, 8, 9, 10,—total 4.

For Pôt Numbers.

Total stones ○	25
Old stones utilized for Survey number ..	8

18. In Varkas numbers where stone cairns (Burujs) now exist they should be confirmed, unless put up contrary to vahivat, and where the corners of Varkas numbers are defined by a central Buruj and stones as shown in margin (o▭o / o), these corners should be considered well defined by the cairns, but in case of removal of the stones, the corner could not easily be ascertained in the field; therefore the stones should be replaced by earthen mounds placed at a distance of 4 annas from the Buruj as shown in sketch =▭= (with ‖ below).

19. Where two or more earthen mounds are put up denoting a corner of a Survey number no central stone is required, but if the old corner is confirmed, the central stone marking the corner should not be removed =▭= (with ‖ below).

Chapter VIII.

Orders for Assistants.

1. In all cases the Assistant Superintendent should, in commencing work in a taluka communicate with the Mamlatdar, and induce him to interest himself in getting the required stones supplied and bandhs erected at the cheapest possible rate: as far as is practicable any reasonable suggestion of the Mamlatdar should be attended to.

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* This rule contains detailed instructions to the Measurers for giving effect to the rules on the subject of "Erection of Boundary Marks" in different descriptions of land.

† This chapter contains detailed instructions to the Measurers, but they being in vernacular are not printed in this compilation.

2. In some villages the villagers will not supply chain-men and flag-holders. When this occurs, the Assistant must send for the village officers when he is about to commence work in the village, and explain to them that if they will not supply chain-men and flag-holders they will be supplied and paid for by Government, and their cost recovered from the villagers. He should also communicate with the Mamlatdar, and induce him to use his influence, and persuade the villagers to supply flag and chain-men.

3. There are three courses available for erecting boundary marks:—

(1) The people of the village putting them up themselves without payment.

(2) The people of the village finding a contractor, an inhabitant of the village, to do so.

(3) The employment of a contractor, an inhabitant of another part of the country.

The first of the above plans is the best, and, where the people will do the work in time, should be adopted. The last plan is the worst, and must never be resorted to, except where the first and second plans have been found impracticable. A report on the subject must be made to the officer in charge of the Survey whenever it is necessary to resort to the third course.

Every Assistant Superintendent is responsible for using his best endeavours to keep down the cost of boundary marks; and where unnecessary expense is caused by his neglect, he may be required to make it good.

4. When testing numbers in which there is a large difference should be looked at; and when the difference is large, and cannot be accounted for, it should be placed beyond all doubt that the new measurements are correct. All numbers tested in which the difference between old and new is over 5 per cent., should have the test area shown opposite them, and after the Patraks have been examined they should be sent to the Superintendent.

5. In revision survey Forms the "Khanisumari" and "Isamwar" Forms should not be prepared by the classers in future. The plan of village or "Ghar Nakasha" should be prepared as heretofore by the classers and forwarded to the Superintendent for transmission to the Collector, under whose orders the census of villages will be taken for the future.

KONKAN REVISION SURVEY SUPPLEMENTARY RULES.

1. Original measurement of rice, garden and rabi to be confirmed.

2. Old Survey Numbers of above description containing Pôt Varkas of or above 10 gunthas to be examined.

3. Boundaries of Survey Numbers described in Rule 1, adjacent Varkas Numbers to be examined.

4. Varkas found to be now rice, garden or rabi, how to be dealt with.

5. Measurement of converted Varkas how to be done.

6. Pieces of rice, garden and rabi found in entire Varkas Numbers how to be dealt with

7. Old Survey Numbers not corrected or altered.

8. Corrections or alterations in entire Varkas Numbers.

9. New measurements how recorded.

10. Old Survey or Pôt Numbers required to be sub-divided.

11. Old Survey or Pôt Numbers intersected by new made-roads or Railways.

12. Old Survey or Pôt Numbers of which river or stream forms the boundary.

13. Lands taken up for public or special purposes.

14. New rice, garden, or rabi found in Forest Gurcharan or unoccupied Government land how to be dealt with.

15. Village site boundaries.

16. Boundaries of Municipalities.

17. Pardi Numbers in village sites.

18. Mixed descriptions of land in one Survey or Pôt Number how to be dealt with.

19. New boundary marks to be erected.

20. Remarks to be written in field books regarding all Survey Numbers or Pôt Numbers dealt with.

21. Entire Varkas Numbers to be confirmed as they stand.

22. Oversized Numbers need not be broken up.

23. [Cancelled.]

24. Applications for examination of boundaries of Survey Numbers how to be dealt with.

25. Village Officers required to show new rice, garden and rabi in entire Varkas Numbers.

26. Rabi lands found in Varkas how to be dealt with.

27. Boundary dispute of villages.

28. Boundaries of adjacent villages to be compared and where necessary corrected.

29. Boundaries of Forest lands not to be traversed.

30. Scattered Survey Numbers to be fixed correctly in maps.

31. All Theodolite work to be connected with Topographical Survey stations.

32. All Theodolite work to be done on the triangle check system.

33. Theodolite work how to be plotted.

34. Old Survey maps to be made use of as far as possible.

35. Confirmed old Survey Numbers need not be re-plotted.

36. New maps to be made where old Survey map is found to be decidedly incorrect.

37. All matters not referred to in these rules to be disposed of in accordance with Konkan Revision Survey Rules.

38. Original classification to be confirmed.

39. Lands to be re-classed, verified and valued.

40. Varkas need not be re-classed.

41. Khatedars wishing to have phalni and classification done of their Varkas lands to pay fee for having it done.

M H 1700—36

KONKAN REVISION SURVEY SUPPLEMENTARY RULES.*

1. The original measurement of rice, garden, and rabi lands done with the cross-staff and chain has been found to be generally sufficiently accurate for adoption as it stands, and therefore no time should be wasted in re-measuring Survey numbers originally made of such description of lands.

2. All old Survey numbers of the above description containing according to the old survey area described as Pôt varkas of which any one or more pieces (compact and in one block) are of 5 gunthas and upwards in area, must be examined in respect to all such pieces of Pôt varkas and if no alteration has taken place should be confirmed as they stand. All small pieces of Pôt varkas under 5 gunthas in area, whether aggregating 5 gunthas or more, need not be examined but should be confirmed as they are. Survey numbers containing only small separate pieces of Pôt varkas all under 5 gunthas in area each need not be examined at all. Rabi land found in Pôt varkas must be divided off separately whatever its area. Detached pieces of rice in entire Varkas numbers under 5 gunthas in area need not be measured. Detached pieces of rice in Pôt varkas (which cannot be included in neighbouring rice presumably) of under 1 guntha in area need not be measured, but a report should be made of such pieces as the existence of rice cultivation points to the capability of the Pôt varkas being converted into rice.

3. The boundaries adjacent to Varkas numbers of all old Survey numbers of the description given in Rule 1 should be examined, and if no alteration is required, those Survey numbers should be confirmed as originally measured.

4. All lands originally measured as Varkas, either in the above description of Survey numbers or on their boundaries, and now found to be rice, garden, or rabi land should be measured and dealt with in accordance with the Konkan Revision Measurement Rules—Appendix E.

5. In all cases where such measurement is required to be done, the converted varkas only should be measured and added on to or deducted from the original sketch of the Survey or Pôt number, but the whole Survey number should not be re-measured unless it is found by this examination to have been originally measured so incorrectly as to absolutely require re-measurement in full. In short, as little measurement as possible should be undertaken, provided important errors in the original work are not passed over and left uncorrected.

6. All pieces of rice and garden above 5 gunthas in area and rabi above 20 gunthas in area found in entire Varkas numbers should be measured off into separate Survey numbers, and fixed in their proper places inside the entire Varkas Survey numbers. All such newly made Survey numbers should have boundary marks erected in accordance with the Konkan Revision Measurement Rules—Appenddix E.

7. All old Survey numbers, except those in which, according to the above rules, correction or alteration has to be made, should be confirmed as they are and need not be examined nor have new boundary marks erected.

8. Corrections or alterations in entire Varkasn umbers does not necessitate re-measurement of such Varkas numbers nor erection of new boundary marks, unless some important error is found which cannot be passed over and must be corrected.

9. All new measurements should be recorded in the measurers' field books as usual with corresponding marks and letters in the old field books showing the bases on which the new measurements were taken, and they should be plotted on the old "pakka" fair field books and on the old Maps, and a statement should be prepared for each number altered or corrected in the form of a Kam-zasti Patrak showing the increase of area under one head and the proportionate decrease under the other head, so that the work may be easily verified by any other measurer taking up the books.

10. All old Survey or Pôt numbers requiring to be sub-divided in consequence of being held by different Khatedars or Inamdars or containing Government and Inam lands must be sub-divided and have new boundary marks erected according to the Konkan Revision Measurement Rules—Appendix E.

11. All old Survey and Pôt numbers which have been intersected by new made-roads or railways, should be made into separate Survey or Pôt numbers and have new boundary marks erected on the road or railway boundary. The line of road or railway should be fixed by theodolite and offsets taken to the sides and places where new boundary marks are required should be marked off on the ground at once by the theodolite karkun. The whole number on either side need not be entirely re-measured.

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* To expedite the revision Survey operations in the Thana and Kolaba Districts these Rules were introduced in 1890.

12. Old Survey numbers of the description given in paragraph 1, of which a river or stream forms the boundary, must have that boundary examined and wherever any considerable change is apparent, must be measured only as far as may be absolutely necessary to correct that boundary.

13. In all Survey or Pôt numbers in which land has been taken up for a public purpose or for any other special purpose sanctioned by Government, and of which intimation should be received from the Collector or Mamlatdar, the land so taken up only should be measured and demarcated according to the Konkan Revision Measurement Rules—Appendix E—and shown in the maps and sketches as usual, the remaining part of the Survey or Pôt number need not be re-measured entirely.

14. When new rice, garden, or rabi is found in old Survey numbers appropriated for forest or grazing or any other public purpose or recorded as Government unoccupied land, such pieces of new rice, garden, or rabi should not be measured either separately or included in the adjacent occupied Survey numbers, for all such encroachments are unauthorised, and it is a matter for the Collector's decision whether such appropriation of land without permission is to be allowed and given over to the cultivators thereof or not. In all such cases the original boundary of the occupied Survey numbers should be confirmed, new boundary marks erected along that boundary, and the encroachment reported to the Superintendent for communication to, and disposal by, the Collector of the district.

15. If village site boundaries are altered in any way since the original Survey, wherever the adjacent Survey numbers have, in accordance with these rules, to be examined and demarcated, the original boundary should be confirmed, and the encroachment of cultivation on village site or *vice versâ* should be reported on for enquiry and decision by the Collector.

16. In the larger towns such as Kalyan, Thana, etc., where municipal limits have been fixed and demarcated, the boundaries of the municipality should be traversed and shown on the survey maps, and none of the lands within that boundary should be noticed in any way by the measurers.

17. Pardi numbers in village sites of whatever description should all be measured in accordance with Rule 14 of Chapter V of the Konkan Revision Measurement Rules—Appendix E.

18. All old Survey Pôt numbers containing mixed descriptions of lands, such as rice, garden, rabi, should be re-measured only as far as may be absolutely necessary to divide off and make into separate Pôt numbers lands of the different descriptions; whichever description of land is the smallest in area should be measured, and the area deducted from the original area and where the line of division is easily fixed from point to point of the old sketch no re-measurement will be necessary, and the respective areas of each description of land should be ascertained with the area comb, to tally with the area of the original whole Pôt number.

9. New boundary marks according to the Konkan Revision Measurement Rules—Appendix E—should be erected for all Survey numbers in which the Measurer has to make corrections or alterations. All other numbers not examined by him, and in which no corrections or alterations have to be made, as well as all entire Varkas Survey numbers need not have boundary marks erected at once. With regard to such Survey numbers that duty will be performed later on by the Agricultural Department.

20. For all Survey or Pôt numbers re-measured, corrected, or altered, a remark should be written in his field book by the measurer, giving the number of the rules under which it has been thought necessary to measure, and for all Survey numbers examined and not altered or which it has not been necessary to examine at all, a remark should be written stating that the original measurements have been confirmed, and the rule quoted under which they have not been even examined.

21. Old Survey numbers of entirely Varkas land should not be wholly re-measured, but their principal corners should be demarcated in the field and plotted on the map after being fixed by verifying chain measurements or by theodolite angles which should be recorded in the field books, so that there may be no difficulty in plotting these numbers in their proper position on a new map should it be necessary to do so. The measurement and demarcation of the intermediate bends will be done hereafter by the Agricultural Department.

(1) Varkas numbers entirely surrounded by rice land will have been practically thoroughly examined and probably sufficiently demarcated by the action of Rules 3, 4, 5; therefore such numbers should be held to have been fully dealt with in the field and their correct area (taken out by scale) as determined at Revision Survey should be recorded. Any boundary marks found necessary should be erected.

(2) Varkas numbers bounded on three sides by rice land and on the fourth side by the village boundary should be similarly treated as their examination in the field will also have been fully done under Rules 3, 4, 5 and 28.

(3) Varkas numbers bounded on three sides by rice land and the correct record of which therefore can be completed with little additional labour by the measurement of the remaining side should have this measurement done and recorded and the number should be then treated as directed in clause (1).

(4) Where the old boundary marks at the corners of Varkas numbers still exist in the field they may be confirmed, as the substitution of earthen mounds for these will be done hereafter by the Agricultural Department, but in places where new marks may be required they should be erected in accordance with the rules in force.

22. The rule for making Survey numbers of different descriptions of lands of certain fixed areas should be considered in abeyance, and all Survey numbers exceeding the sizes* laid down in the Thana Printed Rules should not be broken up, but allowed to stand as they are.

23. [This Rule which referred to the breaking up of old Survey Nos. was subsequently cancelled and is therefore not printed.]

24. Applications to have boundaries of Survey numbers examined and demarcated which are not necessarily examined and demarcated in accordance with these rules should be forwarded to the Superintendent with an estimate of the time required for such examination, and if necessary rectification of the old boundaries and orders will be issued to have the work done on payment of the cost of such operations.

25. When the revision of each village is begun the Assistant should issue an order to be given to the village officers by each measurer or theodolite karkun appointed to work in that village, desiring them to point out all scattered pieces of rice, garden, and rabi known to exist in entire Varkas Survey numbers, and the acknowledgment of that order as well as a written statement to be obtained from the village officers on completion of the work to the effect that all such lands have been pointed out to the measurer and disposed of by him and that none remain undisposed of, should be recorded among the village papers under the signature of the measurers concerned.

26. During the general inspection of the village lands done in accordance with these orders by the measurer, all lands producing rabi crops or which are obviously rabi lands should be noted and if they were originally recorded as varkas the necessary corrections should be made in accordance with the Konkan Revision Measurement Rules—Appendix E.

27. Whenever an application is received complaining of a boundary dispute between two villages or of boundaries of villages not having been properly laid down, the Assistant should examine the disputed ground, and, if necessary, order a boundary dispute map to be prepared, after which the correct boundary should be settled and laid down in accordance with orders on the subject.

28. When working in the field the theodolite karkuns should compare the boundaries of their villages with those of all the adjacent villages, and where both tally, should have new boundary marks erected on the common boundary in accordance with the Konkan Revision Measurement Rules—Appendix E—but where the boundaries do not tally he should fix the correct line if undisputed on both original maps in red ink and demarcate it in the field, and if disputed he should report to the Assistant for orders.

29. Should it be necessary to traverse all or most of the boundaries of any village the theodolite karkun should traverse only such portions of the boundaries as lie between the corners of forest numbers. The forest boundaries are all traversed by the Bombay Forest Survey Party, and therefore need not be gone over again by the theodolite karkuns of this Department.

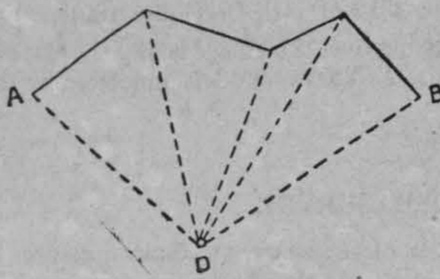
30. All scattered Survey numbers of the description given in Rule 1, whether existing at the time of the original Survey or newly measured, should be fixed correctly on the map by the theodolite karkun.

31. All theodolite work done in any village should be connected at both ends with the nearest stations of the Topographical Survey of India and their observations from those stations taken as a check on the correctness of our theodolite work which will have to fit in with the points fixed by the Topographical Survey.

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* The following were the sizes fixed by the Thana printed Rules for the different descriptions of land :—

Description of Land.	Maximum area of Survey No.	Maximum No. of occupants.
Rice	5 acres	Not to contain more than 6 occupants.
Do.	1 to 1½ acres	If held by more than 6 persons.
Do.	8 acres	If held by one person.
Bagait	Same as Rice	Same as rice.
Rabi	Double the maximum for Rice	Do.
Varkas	Flat level Varkas = 30 acres Katal or sheet rocks = 50 acres Hill sides or sloping Varkas = 125 acres	*Nil.*



32. All theodolite work should be done on the triangle check system, that is to say, in surveying in any direction, say A B, to fix on the map the correct position of scattered rice fields, a check point D should be selected on some corner of a Survey number, where it can easily be seen from all the theodolite stations, and from each of these an angle should be taken to the flag at D, so that by working out the triangles the correctness of the angles and measurements will be verified.

33. All theodolite work done in each village should be plotted on a separate piece of map paper with longitude and latitude lines drawn thereon by calculation of co-ordinates with the traverse tables, and should be compared with the old map, and if any material difference is found in the position of scattered numbers shown on the original map which will affect the correctness of the Varkas numbers plotted thereon, it should be shown to the Assistant, who will give orders to have a further examination made by theodolite of the principal points which it is absolutely necessary to have fixed accurately on the map. Should this theodolite work result in any one of the boundaries of the village being proved to have been inaccurately surveyed or plotted, the new theodolite work will have to be extended to that boundary line, so that it may be accurately shown on the new map.

34. It is desirable to make use of the old maps wherever it is possible to do so, and therefore no new map need be made unless it becomes absolutely necessary to do so. All new measurement, correction, or alteration work should be shown in red ink on the old maps, so that in the recess a new map may be pricked off from it.

35. Old Survey and Pôt numbers of which the original measurements are confirmed need not be re-plotted in the fair field books.

36. If the original map is decidedly incorrect and cannot be made use of, a new map should be plotted on the new theodolite karkun's map with the aid of the old field books, and in such cases it will be necessary for the theodolite karkun to fix in on his map the original Survey base lines on which the original work was plotted, and for this purpose all original kacha maps and parighs of villages, if obtainable, should be made available.

37. Whenever re-measurement or alterations have to be made they must be made in accordance with the existing Konkan Revision Measurement Rules—Appendix E—which must also be considered the guide for the disposal of all cases not dealt with in these supplementary rules.

38. As regards original classification it has been found that the work now under examination is fairly correct, and the results may be accepted without further re-classification; therefore on being ordered to revise the classification of any district the Assistant should report in English under which officer's supervision the original classification was done and ask for the Superintendent's instructions with regard to the verification thereof.

39. Under any circumstances the following revision of the old classification will be necessary:—

A. To re-class—

(1) All new rice-lands except Rabi turned into rice.

(2) Lands originally classed as rice now recorded as Rabi.

(3) Lands originally classed as garden, now recorded as Rice, rab or varkas.

(4) Lands originally classed as Varkas, now recorded as Rabi or rice.

(5) All Pullan lands.

(6) New Pôt varkas land where absolutely none was classed before.

(7) Lands originally classed as rice and Rabi, now recorded as Varkas.

B. To verify but not re-class—

(1) Lands originally classed as rice, now recorded as garden.

(2) Lands originally classed as Rabi, now recorded as rice or garden.

(3) Lands originally classed as Varkas, now recorded as garden.

C. To verify old classification and not necessarily re-class—

(1) All Kharapat numbers adjoining Shils and on boundaries between Kharapat and Uthalpat lands.

D. To value all Dusota crops in lands not originally classed for second crops.

E. If whilst verifying the old classification under Rule C (1) or valuing the capability for growing second crops under Rule D, an error of 4 annas or more in the old classification is

suspected with good reason or comes to notice, the number in which it occurs must be re-classed (sanctioned by Survey Commissioner's memorandum No. 2312 of 14th December 1891).

40. Varkas lands need not be re-classed, but when going over the village lands, the classers should note, and deal with all Rabi lands, originally classed as Varkas and left unnoticed by the measurers, in the manner ordered above.

RULES REGARDING TRAVERSE SURVEY.

1. Main circuits must be first run, including an area of ten or twelve square miles, or of from 7,000 to 10,000 acres including several villages. These must then be broken up into minor circuits of one or more villages including 2,000 to 3,000 acres each. In taking these minor circuits any conspicuous natural marks within the village area should have their position fixed by measurement or bearing.

2. Villages up to 5,000 acres may be included in one traverse, any village of more than 5,000 acres must be first included in one main traverse and then sub-divided into two or more minor traverses according to size, making use of roads as the lines of sub-division. A minor traverse should be made for each 3,000 to 4,000 acres.

3. In traversing along lines of road or boundaries of villages, offsets should be taken to salient points, and the points on which numbers break off and the distances should be noted in the field book. A printed copy of the original village map should be furnished to the establishment employed upon the new survey.

4. In case of two or more small villages being included in one minor circuit, the point of junction of boundaries should be accurately laid down and bearings and measurements be taken with offsets to bends on the most distant point visible on the boundary which does not form part of the minor circuit.

5. When two or more small villages are included in one minor circuit, points of triple junction ("tewdas") should always form stations. In fact it is advisable to form the stations always on known fixed points which can be afterwards found if necessary, such as the junction of two or more old Survey Numbers. The points of crossing of roads should be noted in the minor circuit field book.

6. We cannot wait to commence cross-staff work till the circuit survey of the village is completed. The only course will be to push the circuit survey as rapidly as possible, in order to have the advantage of the theodolite map before finishing up the detailed village map. Two or three theodolite measurers should be set aside to this circuit work and put on it at once. Great care must be taken to see that their chains are accurate and are kept so.

7. The country is open and stations should be made at a good distance apart, as far in fact as can be readily seen. The measurers must be warned that great care must be taken by them in chaining,—any error or carelessness must be detected as their angles and measurements will be subjected to careful check under the Assistant's own immediate eye.

8. In the circuits, Assistants will follow the system of traverse surveying described in letter No. 962 of 21st September 1868, which was forwarded to the Deputy Superintendent with letter No. 973 of the 21st September 1868.

9. Great care must be taken to ensure the connection of traverse work done with different instruments and to avoid error arising from instrumental error or local attraction. To effect this the best course will be to take, at all triple junctions of village boundaries, a bearing to a well-defined permanent distant object, the precise point from which it is taken being first fixed by a peg at least a foot long driven up to the head in the ground over which the theodolite should be placed exactly perpendicular. This will enable the same point to be taken up in commencing the traverse of the adjacent village and will ensure all the work being done on a common meridian though at the time unknown.

10. The precautions enjoined in the preceding paragraph must be invariably followed with the greatest care in the case of all main circuits, as on those the accuracy of the taluka map principally depends.

KONKAN REVISION CLASSIFICATION RULES.

Contents.

Chapter I.

Rice Crops and Rice Lands of the Konkan.

1. In the Konkan it is the custom to cultivate several kinds of rice, but there are only two distinct classes of crops which are named, respectively, "Garwa" and "Halwa." The "Garwa" includes all the finer descriptions of rice which have a small grain ; it takes longer to ripen than the inferior sorts, and crop is cut in November. The "Garwa" rice crops are more valuable than the "Halwa." The "Halwa" rice has a large coarse grain and is usually cut in October.

2. Some rice crops, such as the "Panpit," which are reaped earlier in September, should be included in the "Halwa" description ; others, such as "Tykala," which are reaped later than November, should be included in the Garwa crops, and some rice crops reaped late in October or early in November are known as "Nim-Garwa."

3. The kind of crops grown in the different kinds of soils should be taken into consideration in determining the quality and value of land, which should, however, be classed invariably according to its capabilities and not according to its produce only. For instance, land capable of growing Halwa crops only may occasionally be found to have produced a Garwa or Nim-Garwa crop, or *vice versâ;* in such cases the capability of the land producing the superior or inferior crops should alone be considered, and no undue weight given to the kind of crop actually found to exist in the field.

4. Rice lands are divided into -

1st.—Sweet rice land.

2nd.—"Kharapat" or salt rice land.

3rd.—"Khari" or "Baul," which are rice lands found on the laterite and sheet rock plateaus on the coast.

These three kinds of rice land are classed under separate rules given in the following chapters in succession.

5. By rice land must be understood, in classification, land which usually produces rice, is level, situated low and embanked, and on the other hand land with a sloping surface, with no embankments, even if producing a rice crop occasionally, is not to be considered rice land.

6. The kinds of rice crops grown in each survey or pôt number should be noted near the sketch in the classer's books, and a statement showing the varieties of rice, and the area of each kind under cultivation, at time of classification, should be made out for each village, according to Form No. 2 given at the end of these rules.

Chapter II.

Soil Classification of Sweet Rice Land.

7. First order of soil—

Colour.—Yellowish red, dark red, or brown or brownish black.

Consistence.—The particles are consistent when dug up, clods light and friable, pure earth.

Capabilities.—Capable of producing Garwa or Nim-Garwa crops, but seldom, if ever, sown with Halwa rice.

Situation.—Low-lying, with good natural moisture and with good drainage on to it.

Faults.

Soil of the above description containing gravel, or in black soil, clay, to such a degree as to affect its productive qualities, to be reduced one class, and where the depth is only ¼ cubit, reduction in the 1st order being impossible, it should be entered as belonging to the second order.

8. Second order of soil—

Colour.—Red, grey or black.

Consistence.—In red and grey soils little consistency, clods break and fall to pieces on being dug up, excessive sand. In black soils, clayish with large fissures on surface, the clods when dug up being hard, tough and heavy.

Capabilities.—Not capable of producing the Garwa rice crops, but always sown with Halwa crops, and in best situations capable of producing only Nim-Garwa rice.

Situation.—On hill sides or high-lying land and on sea-shore.

9. Scale of valuation of soil classes :—

Order of Soil.	One cubit deep, value in annas.	Three-fourths cubit deep, value in annas.	Half cubit deep, value in annas.	One-fourth cubit deep, value in annas.
First order	8	7	5½	4
Second order	6	5	3½	2

In classing the soils the figures of valuation in annas should be entered in the shares.

10. "Jalwat" land is that in which from excessive moisture the crops are liable to rot, and is known by the kind of white grass which is generally found growing on it and the oily reddish substance found floating on the surface of the water ; in some cases the soil is always muddy, and on being dug up a black or reddish subsoil clay is found ; in others it does not always remain moist, but becomes friable in the hot weather ; in this kind of soil a plant with small leaves and little white flowers known as "Shetwad" grows in large quantities. This kind of soil should be considered as of the second order and the soil classification reduced one or two classes according to the liability of the crop to rot.

11. Rice land affected by salt water —

(1) Land in which the crop is damaged by salt water, but where the presence of the salt is only discovered on digging, should be placed in the second order and the soil reduced one class.

(2) In land where the presence of salt is detected on the surface, the valuation of soil should be reduced one or two classes in proportion to the extent of the damage. In places where at high tides the sea water floods the soil, the valuation of soil should be reduced two or three classes.

(3) Land usually covered with salt water, but which is occasionally cultivated, should be classed at two annas.

Chapter III.

Water Classification of Sweet Rice Land.

12. In the same way that the soil is classed according to its capabilities, so must the extent of the water-supply be taken into consideration and the value in annas entered in each share. The value of each class is as follows :—

Class 1 .. .. value 8 annas
,, 2 .. .. ,, 6 ,,
,, 3 .. .. ,, 4 ,,
,, 4 .. .. ,, 2 ,,
,, 5 .. .. ,, 0 ,,

13. The following is the explanation of the manner in which the class of the water is to be determined :—

1st.—In fields which are well embanked and the drainage from higher ground is good, where the crops are not liable to injury from a cessation of rain for a period of 15 days, or where "Garwa" crops, such as Ambemore, Patni, etc., are usually grown, water is to be considered as 1st class and valued at 8 annas ; should a "Halwa" crop be found in fields having good soil, and a full water-supply as mentioned above, the crops should not be taken into account and the water should be classed as 1st class.

2nd.—The water should be classed as 2nd class and valued at 6 annas in fields which will not bear a "Garwa" crop with certainty, but which are well embanked and have a good supply of water and bear a full crop of "Halwa" rice, such as "Halwa," "Patni," "Baksha," etc.

3rd.—In high-lying fields in which Halwa crops are grown, but in which the supply of water is too limited to produce a full crop, the water should be classed as 3rd class and valued at 4 annas.

4th.—In high-lying fields which have no drainage, which receive only the rain which actually falls on the surface, or in fields which are not level and have no embankments to retain water, the water should be classed as 4th class at 2 annas.

5th.—In high-lying rice lands without embankments, which have too great a slope to allow of water remaining on them, no value to be given for water. These are by Rule 5 excluded from rice and therefore this rule seldom applies.

14. The different classes of water are to be valued as above with the following exceptions :—

1st.—In some rice lands there is sufficient natural moisture in the soil to allow of sugarcane being grown occasionally or a second crop of grain or of pulse after the rice has been cut. Fields of this description should be classed according to the abovementioned rules, and an extra valuation of 4 annas added on account of sugarcane and 2 annas on account of the second crops of pulse.

2nd.—The water-rate should be raised one class in fields which get the drainage of hills or of village sites and in consequence bear better crops or are not affected in case of failure of rain for twelve or fifteen days. The above is applicable only to fields classed below 1st class.

3rd.—If the above drainage is excessive and likely to injure the crop in any way, the above rule must not be carried out.

4th.—In land which usually grows rice but which, from some fault in the soil, has to be cultivated with a rabi crop every three or four years, the land should be entered under the second order and the water reduced one class, except in cases where the water is of the 4th class.

5th.—In Jalwat lands and in fields where water collects to such an extent as to injure the crop, the water should be reduced one or two classes according to the extent of the injury.

6th.—Lands in which crops are affected by salt water should have the water class reduced—

(*a*) by one or two classes where the presence of salt reduces the productive quality according to the extent of the damage done ;

(*b*) by two or three classes, where the sea water floods the soil at high tides ;

(*c*) land usually covered with salt water should have no valuation put on for water.

7th.—In some places it is the custom once in 8 or 10 years to flood rice lands with salt water, to act as manure when they become unproductive ; care should therefore be taken not to reduce the valuation of lands in such cases.

15. Water-supply from pats—

(1) In lands where there is a sufficient supply of water from the "pat" for the cultivation of "Waingan" (that is a summer rice crop) 6 annas extra is to be added for the water of the pat if the water lasts till end of April ; but if in consequence of water running short in the hot weather an early crop of Waingan has to be sown, the increase should be 4 annas.

(2) (*a*) In some lands sugarcane is cultivated at intervals of two or three years by means of irrigation from pats, that is water-courses. In soil of this description all the land under the pat in which sugarcane is raised in rotation should have an extra valuation of 4 annas added on to the water classification.

(*b*) The above rule is also applicable to such lands when only brinjals or other vegetables are raised.

(3) In lands where after the rice crops second crops of nagli, kulit and other pulse grains are grown under irrigation from pat, an increase of 2 annas should be made.

(4) In cases where a large nala of 15 or 20 haths broad crosses the course of the pat and the water has to be carried over in a trough, or where several small nalas cross the line of the pat or where the water about the end of the season requires to be raised to the level of the pat by hand, the valuation of the water should be reduced by one class.

(5) Where rice lands have the advantage of being able to use the water from streams conveyed by pat during the rains and the possibility of failure of crops owing to scanty rain is guarded against, in such cases the ordinary monsoon water class should be kept as high as circumstances will warrant and the existence of a pat should not be overlooked.

16. Irrigation from tanks, nalas, or wells—

(1) In rice land where "Waingan" or brinjals and other vegetables are grown in the hot weather by irrigation from tanks, nalas or wells by means of "Rahats" or "ukhlis" 2 annas extra is to be added for the water.

(2) Where, by the same means, "Gimwas," that is nagli, kulit and other pulse grains are grown, one anna extra is to be added for the water.

(3) In some rice lands there is sufficient moisture in the soil to begin the cultivation of the abovenamed crops after the rice crops, but not sufficient to last till these crops are cut, and the natural moisture has to be supplemented for the last month or two by irrigation; in such cases the increase should be made one class higher than ordered in the above two paras.

17. (1) In lands which produce a Waingan or hot-weather crop of rice only, without any previous monsoon crop, owing to the difficulty of draining the land during the rains, the water class for the monsoon crop should be shown as 0 and the water class for the Waingan crop shown underneath it thus $\frac{0}{6}$.

(2) In cases where it appears probable that a monsoon crop is grown as well as a summer crop, or it is possible to do so although not customary, the water class for the rain crop should be entered as 4th or 2 annas and for summer crop below it thus $\frac{2}{6}$.

(3) Where there is no doubt about a monsoon as well as a summer crop being grown, the water class valuation for the monsoon crop should be entered in full and for the summer crop below it thus $\frac{6}{6}$.

Chapter IV.

Soil Classification of Kharapat Rice Lands.

18. Kharapat rice crops. The rice crops grown in Kharapat lands are divided into two distinct classes:—

1st.—The Choke, which includes all the white kinds of rice and is considered superior.

2nd.—The Rate, which includes all the red kinds of rice and is considered inferior.

19. 1st order of soil:—

Colour.—Yellow or reddish yellow, or when dug up has a whitish appearance.

Consistence.—Clods light and friable, easily crushed to pieces when pressed with the foot.

Capabilities.—Produces the superior kinds of Choke rice crops.

Situation.—Adjoining sweet rice land or with large drainage catchment area above distant from salt water influence.

Faults.

All faults common to sweet rice lands are also met with in Kharapat lands of the 1st order and therefore reductions in soil classification should be made for those faults similarly with the exception that the existence of salt giving a whitish appearance to the soil is not to be considered a fault.

20. 2nd order of soil:—

Colour.—Dark or clayish black or reddish.

Consistence.—Clods heavy, hard, not easily broken up.

Capabilities.—Produces only the inferior kinds of Rate rice crops.

Situation.—Low in the vicinity of creeks and dykes, under the influence of salt water, far from sweet rice land and with no drainage of sweet rain water directly on to them.

Faults

(1) In the second order of soils where more or less salt exists, but where the salt is not visible on the surface, but on digging it up the subsoil shows existence of so much salt as to affect the productiveness of the soil, then the classification should be lowered one class and the fault shown thus ∧ in the shares so classed.

(2) Should salt appear on the surface as well as intermixed with the soil on its being dug up, the classification should be reduced two classes and the fault shown in the shares so classed thus ≙ .

(3) When the soil, on being dug up, has a whitish greasy appearance, or when there is a thick shiny crust of salt on the surface, or when the soil is so impregnated with salt that it loses all consistency and on being dug up crumbles into dust, then the classification should be reduced three classes and the fault shown in the shares so classed thus ⩓ .

21. Scale of valuation of soil classes—

Order of Soil	One cubit deep, value in annas.	Three-fourths cubit deep, value in annas.	Half cubit deep, value in annas.	One-fourth cubit deep, value in annas.
First order	8	7	6	5
Second order	7	6	$4\frac{1}{2}$	3

22. Should a Rate crop be grown in land capable of producing Choke crops, then no notice should be taken of the Rate crop and the land classed according to its capabilities.

CHAPTER V.

Water Classification of Kharapat Rice Lands.

23. In Kharapat lands the water class valuation is as follows :—

1st Class	8 annas
2nd ,, ...	6 ,,
3rd ,, ...	$4\frac{1}{2}$,,
4th ,, ...	3 ,,
5th ,, ...	2 ,,
6th ,, ...	0 ,,

24. The following is the explanation of the above manner in which the water classes are to be applied :—

(1) Rice lands adjoining sweet rice lands or having the drainage of sweet rain water from a large catchment area above, or which from the existence of surface springs or natural moisture can produce the superior kinds of Choke rice, should have the 1st water class = 8 annas.

(2) Fields which have a smaller supply of water than the above, which are in high-lying situations or where Halwa Patni rice is grown, should have the 2nd water class = 6 annas.

(3) Fields situated near salt water and producing only Rate rice crops, or where the yield of a Choke or Halwa Patni crop is not good, or where although the supply of water is fair only medium kinds of Choke rice are grown, should have the 3rd water class = $4\frac{1}{2}$.

(4) The fourth water class = 3 annas should be applied, first to fields situated near salt water creeks or near the dams and which produce only Rate crops or those in which the salt percolates through the soil; second, where Bhore and other medium kinds of Choke rice are grown and where the water-supply is less or land sloping and water does not stand on it.

(5) The water is to be considered 5th class = 2 annas where the land is at times subject to being overflooded by salt water or where pools of salt water exist.

(6) Where salt water washes over the land or where salt water is retained in the hollows and all the land is not capable of cultivation, only patches of cultivation exist here and there and only about half the land produces crops, the water class should be considered 6th = 0.

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25. Wherever a second crop is grown after rice or the land and situation is such as to warrant the capability of producing second crops, an increase of 2 annas should be made to the water class.

CHAPTER VI.

"Khàri" and "Baul" Rice Lands.

26. Rice lands known by the above two names are found to exist on the laterite plateaus of the hills near the coast and may be described as follows :—

(1) Khari is land either naturally formed by the accumulation of soil which may be of any depth and will produce nothing but rice or fields artificially prepared by hollowing out the laterite rock or surrounding suitable small pieces with stone walls and filling up or spreading over the interior, soil brought from elsewhere. The produce of Khari land is precarious and depends very much on the suitability of the rainfall; it is generally not embanked, it will produce nothing without first having undergone the process of rab burning all over it, the rice is generally sown broadcast.

(2) "Baul" rice land is land formed from the accumulation of soil in the natural hollows existing on the laterite plateaus; it is sometimes extensive, being generally basin-shaped, retains the rain water and produces fair rice crops, but it requires rab burnt all over it the same as Khari.

27. (1) "Khari" land should be classed as ordinary sweet rice land of the second order of soil and in the best situations where a certain good crop of rice may be expected the water class should be entered at 3 annas, in the poorer situations where the crops are likely to be only fair and the produce more precarious the water class should be entered as 4th = 2 annas, and where it is little better than warkas, superficial soil very shallow and a long interval between the falls of rain is likely to cause the rice crops to dry up and fail, water class should be entered at only one anna.

(2) "Baul" land should be classed according to its capabilities as ordinary sweet rice land.

28. Where survey numbers or pôt numbers containing both "Khari" and ordinary rice land are found, all shares of "Khari" should be denoted by the Marathi letter ख written in the left hand upper corner and the anna valuation of the whole survey number and pôt number made out in the usual manner.

29. All purely "Khari" survey numbers or pôt numbers or those in which more than half is "Khari" should be entered in the classer's books and all assessment papers as Khari survey or pôt numbers. "Baul" land need not be separately described as such, but should be treated as ordinary rice land.

CHAPTER VII.

Garden Soil Classification.

30. Gardens in the Konkan are divided into two distinct classes of "Agri" and "Dongri."

(1) "Agri Bagait" may be described as follows :—

(*a*) Land situated in the vicinity of rivers, creeks and on the coast and producing coconuts and suparis in alluvial and sandy soils. In such situations the trees flourish with little or no care, reach maturity early and yield a large produce. There being generally sufficient subsoil moisture, no irrigation is required except in some localities where the young plants may require an occasional watering during the hot weather for the first few years.

(*b*) Land producing grafted mangoes, fruit trees, panvel, sugarcane, vegetables, etc., situated in land which is not rice or rabi land proper, but is dry-crop soil superior to warkas and producing these garden-crops generally with irrigation.

(2) "Dongri Bagait" is known as—

Land producing coconuts and suparis or grafted mangoes, fruit trees, sugarcane, vegetables, etc., situated inland on warkas soil, on high situated mals or on hill slopes where the soil is much harder or full of gravel like moorum, where there is little or no subsoil moisture and irrigation of some sort or other is always required even when the trees are grown up.

31. The soil classification of the above two kinds of garden lands is to be done according to the following rules :—

Agri Bagait.

(1) The 1st class is sandy soil which consists of a mixture of sand and earth in about equal proportions or where there is more earth than sand or pure earth depth of 1½ cubits value 8 annas.

(2) The second class is a reddish soil mixed with sand, more sand than near 1½ cubits depth, value 6 annas.

(3) The 3rd class consists of white sandy soil near or on sea-shore, value 4 annas.

Faults.

Agri Bagait is divided into three classes as above, but in some places the soil on being dug out to the depth of one cubit is found to contain "Karal," i. e., soft sandy stone, or has limestone mixed with it. For this fault it should be reduced a class. Another fault is where, on digging this soil to the depth of a cubit, hard sandstone is found; in this case it should be reduced two classes, but if of the 2nd class it should be reduced only one class. Thus if in any way the depth is found deficient the class is to be reduced, but if the faults occur at a greater depth than 1½ cubits, no notice need be taken of them.

Dongri Bagait.

(1) In "Dongri Bagait" the soil is red and does not contain any sand. That land when level and one cubit and upwards in depth is to be considered as 1st class and valued at 8 annas.

(2) Second class is more gravelly with depth from ¾ to ½ a cubit or of full depth but sloping and uneven surface, when it should be classed as 2nd and valued 6 annas.

(3) Sloping ground on hill-side ¾ cubit or less deep but which is hard and consists principally of moorum is to be considered as 3rd class and valued at 4 annas.

(4) Ground which slopes very much with large boulders and has a depth of ½ a cubit or less and has stones mixed with the soil, is to be classed as 4th class and valued at 2 annas.

Faults.

In classing "Agri" and "Dongri" Bagait if the supari and coconut trees are exposed to the south wind, or if the trees are affected by white ants and die in consequence, soil which would otherwise be classed as 1st and 2nd class should be reduced one class and the reason for doing so should be given in the classer's book. The above is not applicable to the 3rd and 4th class.

32. (1) Fruit trees in all garden lands should be carefully counted and entered in detail in the classers' books and "Bagait Taktas."

(2) In Agri and Dongri Bagait where the coconut and supari trees are very numerous the maximum error allowed in counting is 10 per cent. No greater difference between number entered by classer and the number counted at test should be allowed.

(3) The condition of the trees and their appearance in general, whether flourishing or otherwise, should also be recorded in the classers' books and entered in the Bagait Taktas as condition "good," "fair," or "indifferent," as the case may be.

33. Coconut and supari trees are to be shown as follows:—

(1) "Bardar" or bearing, all trees which have come into bearing or are in blossom and will therefore bear that season.

(2) "Umedwar" or young trees, all those of which the stems show above ground but have not come into bearing.

(3) "Rops" or seedlings, those whose leaves only show above the ground, no portion of their stems being visible.

Old trees past bearing should be recorded in the classers' books as "Zhite" or "Gair Bardar" so as to enable the Assistant to verify the correctness of the classer's counting, but these are not to be shown in the Bagait Taktas.

Grafted mango-trees should also be shown in detail as above.

34. In garden numbers where the coconut trees are very far apart, all trees which are at a distance of within two chains of one another must be considered as standing on one piece of Bagait land and the boundary of this piece must be fixed at a distance of half a chain from the outermost trees of the group.

35. Wherever scattered coconut trees are found, all those within two chains of one another are to be measured and classed together as garden, but when there are only 3 or less or when they are further apart than 2 chains they should merely be counted and a note made of the number near the sketch in the classers' books, the land being classed as rice, rabi or warkas as it may be according to these rules.

36. In some instances it is found that rice crops are grown in the interval between the coconut trees, which are sometimes on the embankments and sometimes standing in the middle of the rice crop; in such cases, if the trees are within two chains of each other, all the land should be classed as garden and a note made in the classers' books and Bagait Taktas to the effect that

it is customary to grow rice crops below the trees; but if the trees are all more scattered and further than two chains apart, then the land should be classed as rice and the trees noted as ordered by Rule 33.

37. As it is necessary to know what situations the gardens are in and whether they are favourably situated for natural moisture of soil and productiveness all gardens should be gradated as follows:—

(1) Gardens in low and level situations, where the natural moisture of the soil is good, should be gradated as first and 1st class for natural moisture of soil entered.

(2) Gardens in level but high situations, where the natural moisture of the soil is less in consequence of the soil being hard and water only found at greater depth, should be gradated as second and 2nd class for natural moisture of soil entered.

(3) Gardens adjoining or on the slope of hills, where the trees will not flourish without being freely watered in consequence of there being no natural moisture of soil, should be gradated as third and 3rd class for natural moisture of soil entered.

(4) The situations of all garden lands should be thus defined in the information regarding the gardens recorded in the classer's books and should be shown in the Bagait Taktas in the column for water class, the class for natural moisture of soil being entered below the annas of the water class, divided from it by a horizontal line as shown in the margin.

Water Class.
$\frac{4}{1}$

38. All land intervening between garden lands and bearing no garden produce should be classed as rice, rabi, pulan or warkas, as the case may be, but never as garden unless actually garden land as described in Rule 30.

39. In preparing Bagait Taktas the classers are invariably to add up in pencil at bottom of each page the figures in the columns showing the number of trees of each kind and to show at the end of the Bagait Taktas the total area of garden land and the total number of trees of each description.

Chapter VIII.

Garden Water Class.

40. Garden lands which require no irrigation but coconut and supari trees grow from natural moisture of soil or surface springs should have water class applied as follows:—

(1) Where the coconut and supari trees flourish, the moisture being perennial without being excessive, 1st class = 8 annas.

(2) The same as above but the gardens are situated in inaccessible places in the hills, 2nd class = 6 annas.

(3) Where the moisture is not perennial but in consequence of its decreasing in the hot weather the trees suffer and produce is less, 3rd class = 4 annas.

(4) If in the case of perennial or abundant water-supply it appears that the moisture is too great, a fault should be given and the class reduced.

41. Irrigation from tanks and streams:—

(1) When the water is received by natural flow through a pat and the supply of water lasts throughout the year and is ample for watering every second or third day, the water should be classed 1st = 8 annas.

(2) If as above but water lasts only till April and is not afterwards sufficient for watering the garden properly, the water-supply should be classed 2nd = 6 annas.

(3) If the water can be fully supplied by natural flow through pat up to March, but afterwards decreases so much as to necessitate a reservoir for the collection and flow of sufficient water, then the water-supply should be classed 3rd = 4 annas.

(4) If the supply of water by natural flow in pat only lasts up to the month of January or February, then it should be classed 4th = 2 annas.

(5) When the water conveyed by pat has to be carried across a large nala by means of a trough or where the water has, about the end of the season, to be raised to the level of the pat by hand, the valuation of the water should be reduced by one class.

(6) When the water from the tank or stream is not obtained by natural flow through pat but is supplied by means of a "Rahat" or "Ukhli," the valuation should be reduced by one class.

(7) The water-supply by pat need not be considered the same throughout the whole length of a pat; for instance, the garden lands situated near the dam in the stream may get full supply and have the water classed 1st, whilst other gardens further away may not be able to get more than what should be classed 2nd; in such cases the necessary reduction in the water class should be made according to the capabilities and supply in the stream

and the distance of the garden numbers from the dam, and a remark should be written in the information regarding the pat in the classers' books giving reason for the decrease in the water class.

42. Irrigation from wells—

(1) All classification shares irrigated from wells *only* by Rahat or Ukhli should have no water class entered in them, but the class of the well and all detailed information required regarding it should be carefully written out in the classers' books and entered in the Bagait Taktas according to Form No. 6 of appendix attached to the vernacular rules.

43. The wells should be classed as follows :—

(1) A first class well is one made of stone laid in mortar, in which the water remains all the year round, and the supply is sufficient for watering the garden every other day or every third day as may be required.

(2) A second class well is one which is built up with rubble only, that is a katcha well, or it may be a pucka built well, in which the supply of water diminishes about April and is only sufficient to water the garden once in eight days.

(3) Third class wells may be either "pucka" or "katcha" built, but the water supply in them becomes less in March, and in April there is only enough for perhaps one watering, and in May they are quite dry.

(4) Fourth class wells may be either "pucka" or "katcha" built, but the "Rahat" is only used for two months after the rains, or the water may be taken up in pats and will last for about three or four months.

(5) Wells in the villages on the sea coast generally contain brackish water. This is not a fault for which any reduction should be made in the class of the well, but a remark should be made regarding this in the classer's book where the description of the well is shown.

(6) A well "pucka" built, in good order, which has not been used for some years, is to be classed according to the supply of water, and a remark made in the classer's book and Bagait statement showing the number of years the well has been out of use. If it should have fallen in at all, it should be classed one class lower on this account.

(7) The class to which a well belongs should be shown in column 3 of the Bagait Takta under the consecutive numbers of the wells divided from it by a horizontal line, thus $\frac{2}{1}$, by which will be understood that the second well in that number is of the first class.

(8) The land under irrigation from each well should be carefully ascertained at time of classification and the area estimated according to the shares so irrigated and entered in column 19 of the Bagait Takta, which should show clearly how much land in that and other adjoining survey numbers is irrigated by each well.

44. Gardens irrigated from wells, tanks, streams or rivers, the water being brought in "Ghagars" or pots, should have the water classed 4th = 2 annas.

As a rule seedlings require some irrigation during the hot weather, and if not irrigated by any other means, are certainly watered with Ghagars ; therefore whether the trees are irrigated or not when grown up, they must have been watered as seedlings and the Ghagar water class must be applied.

45. Information regarding gardens and wells should be written out at time of classification as follows:—

(1) For gardens irrigated by "kutcha" wells, that is, those which are not built up or permanent but merely "Bowkils" or holes dug out whenever required—

(1) The depth from the surface to the water and the depth of water.

(2) The number of coconut, supari and fruit trees and their state, whether good or otherwise.

(3) Whether other survey numbers have a right to be supplied with water from the well or not ; if so, what share of water each number is entitled to.

(4) The total area of land irrigated by this well at time of classification.

(2) For gardens irrigated by pukka or built up and permanent wells—

(1) Who sunk the well and when, whether he or his heirs are still in possession of it, if not who is.

(2) The manner in which the well is built up and what contrivance is used for drawing up the water, and if several how many.

(3) The depth from the surface to the water and the depth of the water.

(4) Whether the well is being worked or not at time of classification; if so, the number of hours it has been worked previous to classification and for how long it may be worked during the hot season.

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(5) Whether the water is sweet or brackish, what kind of a spring it has and the direction from which it comes.

(6) The number of coconut, supari and fruit trees and their state, whether good or otherwise.

(7) Whether other survey numbers have a right to be supplied with water from the well or not, and if so what share of water each number is entitled to.

(8) The total area of land irrigated by this well at time of classification.

Chapter IX.

Rabi Soil Classification.

46. By rabi must be understood all lands on the banks of rivers, creeks and streams which are formed by alluvial deposit and are generally composed of soil mixed with sand ; they produce crops of rice, tur, tag, kulit, udid, powtas and in some places sugarcane.

Rabi lands producing rice crops which are situated low or are of level surface and embanked should be classed as rice land under Rule 5, but rabi lands of a sloping or undulating surface without embankments, although producing rice, should be classed as rabi.

47. There are two kinds of rabi, " Bandni " and " Malkhandi ":—

(1) Bandni rabi is land which is embanked so as to retain water and silt, and which on account of excess of water in the rains cannot grow rice or land which is flooded by fresh water and on which silt or alluvial deposit is found and which may grow rice.

(2) Malkhandi rabi is land originally formed by alluvial deposit, but which is not now overflooded by fresh water and has therefore no benefit from fresh alluvial deposit, is not embanked but is open land like Jirait.

48. The abovementioned lands are to be classed in the same way as lands are classed above the Ghats by the following scale :—

Annas valuation.	16	14	12	10	8	6
Bandni, depth in cubits	1½	1¼	1	¾	½	¼
Malkhandi, depth in cubits.. ..	..	..	1½	1¼	1	¾

49. The valuation is to be made according to the depth as given above, but the valuation is to be lowered for the following faults :—

Kind of fault.	Sign.	Reduction in value.	
		Bandni.	Malkhandi.
Denotes a peculiar mixture more or less impervious to water.	∧	1	..
Denotes liability to be swept over by running water ..	~~~~	1	1
Denotes a mixture of sand	V	1	1
Denotes an excess of moisture from surface springs ..	□	1	..
Denotes a mixture of limestone	∴	1	..

50. In classing " Rabi " it is not necessary to describe it particularly as " Bandni " or " Malkhandi," but under the term of " Rabi " generally the anna valuation of each share is to be entered and an average taken of the whole for each survey number or pôt number.

Chapter X.

Water Classification of Irrigated Rabi.

51. (1) Where there is certainly sufficient moisture in Rabi lands to raise a sugarcane crop every two or three years, 12 annas should be added over and above the value of the soil. As for example, Bandni rabi lands $1\frac{1}{2}$ cubits in depth without a fault is 16 annas, and 12 annas for sugarcane grown every two or three years, making a total of 28 annas. If Malkhandi land, 12 annas for soil and 12 annas for sugarcane, making a total of 24 annas.

(2) The soil which does not produce a full crop of sugarcane or where sugarcane is only grown at regular intervals of five years, 8 annas only is to be added.

(3) Where sugarcane is only occasionally grown 4 annas only are to be added.

(4) A remark stating that sugarcane is grown in certain shares should be made near the sketch in the classer's book.

52. (1) Fields which have an unfailing supply of water from a tank or stream which flows of itself through a "Pat" and which produce 1st class crops of sugarcane and plantains, should have a water rate of 8 annas added.

This water rate (8 annas) is also applicable when brinjals or other vegetables are grown.

(2) The 2nd class is of the same description as the above, except that in consequence of the water not being sufficient for sugarcane, brinjals, onions and other vegetables are grown, or where at the end of the season there is not sufficient water to flow into the pat freely and it has to be raised to the level of the pat by hand. In these cases the water is to be considered as 2nd class and the water rate on the land which is cultivated in rotation should be 6 annas.

(3) The 3rd class includes two kinds: 1st, where the water cannot flow into the pat naturally but has always to be raised by a lift; the 2nd is where water has to be raised from a well by a "Rahat" or "Mot" or any other machine.

Irrigation by either of these means is to be considered as 3rd class and the water valued at 4 annas.

(4) Water brought in pats, whether from a well belonging to the owner of the number or from a well the common property of the village, from a tank or from a river, etc., is to be valued at 2 annas.

53. (1) In places where small patches of brinjals, etc., are watered by hand and where the area is so small that if a separate share were made the average water rate for the number would not be raised more than 3 pies, no extra valuation need be made for the water; but if it exceed 3 pies, then it should be added and a note made of it under the plot.

(2) Rabi lands not usually cultivated by irrigation from pats or wells are to be treated in the manner mentioned above, where the area is very small.

Chapter XI.

Classification of Pulan.

54. By "Pulan" must be understood the sandy plains in the immediate neighbourhood of the sea and tidal creeks; it is found sometimes quite bare, producing nothing, sometimes covered with Kaju and Undin trees and is generally easily convertible into rice land or Agri Bagait.

55. Pulan land should be classed as follows:—

(1) Level, low-lying and situated some distance from the sea with a fair admixture of soil in it, such as is found intermixed with Agri Bagait lands or between rice fields, should be classed as 1st Pulan = 16 annas.

(2) Level sand nearer the sea situated higher, with so slight an admixture of soil that it is hardly perceptible except for a yellowish or reddish tinge it gives to the sand, should be classed as 2nd Pulan = 10 annas.

(3) Pure sand on seashore or sand of the description above but of very undulating surface with mounds and dips, should be classed as 3rd Pulan = 4 annas.

56. All land of this description which may have been measured in with gardens, if bearing no garden produce should be measured off and classed as Pulan. Likewise all land measured as pat warkas of this description should be classed as Pulan, and all survey numbers or pat tukras classed as Pulan should be denoted in the classification share and in all assessment papers by the vernacular letter प.

Chapter XII.

Classification of Warkas.

57. Under the general term Warkas are included two kinds of lands: 1st Bhatle, 2nd Warkas, which are to be classed as follows:—

	As.	As.	As.	As.	As.	As.
Classification Valuation	6	5	4	3	2	1
Bhatle	$\frac{1}{1}$	$\frac{2}{2}$	..	..	..	..
Warkas land	..	..	1	2	3	4

(1) Bhatle land is land with good depth of soil, usually cultivated regularly every year or capable of it, and sometimes producing tur or capable with little labour of being made into rice land.

When 1 cubit or more in depth, to be classed as 1st Bhatle and shown in classer's books thus : $\frac{1}{1}$, value 6 annas. When less than 1 cubit in depth down to half a cubit, or when slightly sloping, to be classed as 2nd Bhatle and shown in classer's books thus : $\frac{2}{2}$, value 5 annas.

(2) Warkas land :—

(1) First class warkas land is either flat or may be slightly sloping, and has a fair quantity of soil, which will grow the different warkas crops in rotation or when fallow will grow the best grass. It is valued at 4 annas.

(2) Second class warkas land is chiefly sloping. It is sometimes flat and slightly stony and is alternately cultivated and left fallow for grass. This kind of land is to be classed as 2nd class and valued at 3 annas.

(3) Third class warkas land is usually very sloping. Trees and brushwood generally grow upon it and it requires a fallow of several years before it can be cultivated. It is also sometimes flat and very stony, with the soil red, on which little grass and few brushes grow. This description of warkas land is to be valued at 2 annas.

(4) Fourth class warkas land consists of the steep sides of large hills which are covered with boulders, or if flat is nearly all sheet rock, with small patches of brushwood. The 4th class is valued at 1 anna.

58. Pôt warkas is dry-crop land included in rice, rabi or garden survey numbers and is classed as follows:—

(1) Pôt warkas, whether classed as Bhatle or Warkas, should have a position class imposed on each share capable of bearing it.

(2) Position class 1st to take 4 annas increase and position class 2nd to take 2 annas increase.

(3) The greater or less possibility of rice cultivation to be the factor in estimating the increase which the land is to take.

(4) This increase or position class should be applied to—

(*a*) All Pôt warkas land flush with rice land and capable of being embanked and turned into rice easily.

(*b*) Sloping land which would have to be terraced for regular rice cultivation.

(*c*) Land which under Rule 5 (Chapter I) is not to be considered rice land but is included in pôt warkas.

(*d*) Land alluvial, found on banks of rivers and streams not coming under the head of Rabi.

(5) The position class should be entered in the classer's books as the water class is entered to each share in rice classification and the Bhag annas worked out as shown below:—

Warkas.

		Class.	Share.	Annas.	Increase.
2	2	2	1	3	2
3		3	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{0}{2}$

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Average Annas 3-6.

Bhatle.

		Class.	Share.	Annas.	Increase.
$\frac{2}{2}$	2	$\frac{1}{1}$	1	6	4
$\frac{1}{1}$	1	$\frac{2}{2}$	$\frac{1}{2}$	$\frac{5}{11}$	$\frac{2}{6}$

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59. (1) Warkas Phalni Tukras should be plotted and classed in the classer's book and the different shares shown. The area of each separate holding is to be calculated with the area-comb and entered in the phalni book.

(2) When the Phalni Tukra is one guntha or less in area it should not be classed at all but entered entirely as Kharab; also in cases where after deduction of Kharab the arable area is less than one guntha. All fractions of gunthas should be absorbed in the Kharab.

Chapter XIII.

General Rules.

60. Rules for "Kharab" or unculturable:—

1st.—In all lands:

The classer should notice in every pôt number whether the measurer has made correct deductions on account of unculturable land, and in case he has not done so he should re-measure and correct the deductions.

The area of large stones and "Katal" (sheet rock) should be carefully estimated by sight and deductions made accordingly.

Wells, houses, all rock, nalas and other uncultivable area must be carefully estimated and deducted.

2nd.—In rice and rabi lands:

Bandhs of less breadth than 2 annas need not be deducted. Bandhs are not to be deducted as Kharab when nagli and other grains are grown on them. In kharapat lands the large embankments, dykes, water channels for drainage and places where salt water is always standing and no crops can be grown should be deducted as Kharab.

3rd.—Kharab in warkas lands:

The Kharab for unculturable should be deducted as shown in Rule 1, but all Kharab estimated by sight should be represented in the classification shares in annas and the average annas of Kharab for the whole survey number or Phalni Tukra worked out in the usual manner and from this the area of Kharab must be deduced. Pies in the average Kharab should have a 6-pie Dharsod and be entered in full annas.

61. (1) "Kurans," i. e., grass numbers, which are sold by auction every year, are to be shown in the classer's "Phalni" books, but the "Phalni" and classification are not to be entered. Below the figure a remark should be made stating that as the number is a "Kuran" it has not been classed.

(2) The figures of forest reserve numbers should be entered in the classing and "Phalni" books, but not classed. A remark showing that the number is included in the reserve is to be written below the figure.

(3) Government "Kanjans," i. e., salt marshes, "Rahats" or "Dangs," i. e., sacred groves, burial-grounds and all places of public utility and hence unassessable, should be treated in the same manner.

62. (1) If at the time of classification it appears, from the shape of a field, that the area is more or less than that shown in the measurer's book or register, the calculation should be examined, and corrected if necessary. If there is no error in the calculation, but if from the plot there is a doubt about the area, the number should be re-measured: also if it appears that the number has not been measured according to the true boundaries or according to the present vahivat, i. e., occupation, it should be re-measured and entered in Statement No. 3. A remark showing that a correction has been made should be written in the books.

(2) At the time of the classification each number on the original village map is to be examined, and all mistakes are to be at once corrected. A description of the nature of the errors is to be made according to Form No. 4 in order that the fair map may be corrected.

(3) All numbers in a village are to be examined in order to find out whether or not they have been made according to the rules, and all mistakes discovered are to be reported to the Assistant in charge of the office and corrections made according to the orders received from him.

(4) At the time of classification the field boundary marks should be examined and compared with those shown in the measurers' books and any "Iranis" or stones that may have fallen down or are out of repair are to be put up. When any are wanting a report is to be made to the Assistant in charge of the office, and an account (Form No. 5) of the number of stones and "Iranis" and cost of erecting them again sent in.

(5) At the time of classification and examination of the entries regarding the names of fields and occupants is to be made, and where differences are discovered they are to be corrected. In Khalsa villages the names of fields and occupants are to be taken from Talatis' books.

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63. In classing care should be taken to divide the number into equal shares, otherwise the average valuation will be incorrect, and each share should be classed carefully and independently on the merits of the land included in it.

64. It is only when the fertility of the soil is reduced by the presence of the deteriorating ingredients for which faults are ordered to be given that the soil is to be placed in a lower class than it would otherwise be: if the fertility is not reduced, the fault is not to be taken into consideration.

65. In classing all lands, besides bagait for which special orders are given, fruit trees found to exist in each pôt number or Phalni Tukra of the following descriptions,—coconuts, suparis, jack fruit and grafted mangoes,—should be counted and the number of each recorded in the classer's book near the classification sketch.

66. (1) When a public well has been included in a number or when the water of a well or of a tank adjoining is used for irrigating a number, the water should be classed according to the rules and the reasons are to be entered in the classer's book.

(2) In cases in which water is allowed out of charity to be brought in pats from wells, no valuation is to be made, but all other instances the water brought in pats, whether from a well belonging to the owner of the number or from a well the common property of the village, from a tank or from a river, etc., is to be valued at 2 annas.

(3) Where the water in the well or "Pat" of any number is not owned by the person who uses it, but is given to him out of charity or is paid for by him, no valuation should be put on it, but a remark to this effect should be made in the classer's book.

67. (1) The manner in which the classing books are to be kept, and entries regarding the correctness of measurers' books, maps and boundary marks are to be written, is given in Vernacular Form No. 1, pages 1 to 25.

(2) At the time of classification, Khalsa land is to be entered as cultivable or waste, as the case may be, but waste lands for which a "razinama" (resignation paper) has not been given should be entered as cultivated. In Khate land all lands, whether cultivated or waste, are to be entered as cultivable, and if not actually occupied it is to be entered as "khatenisbat" waste and in the Bhaganna statement the number is to be shown as cultivable.

(3) In the crop statement, rice crops are each to be shown in separate columns.

(4) Mistakes discovered in the books are to be shown in Vernacular Form No. 3.

(5) Mistakes in the maps are to be shown in Vernacular Form No. 4.

(6) Entries regarding boundary marks are to be shown in Vernacular Form No. 5.

(7) Information regarding garden should be recorded in the Bagait Taktas as shown in Vernacular Form No. 6.

68. Pardi numbers should be classed according to these rules as rice, garden or warkas, as the case may be.

C. W. GODFREY, Major,
Superintendent, Revenue Survey.

RATNAGIRI REVISION CLASSIFICATION RULES.

1. In the Ratnagiri Zillah it is the custom to cultivate several kinds of rice, but there are only two distinct classes of crops which are named respectively "Gurwa" and "Hulwa." The "Gurwa" includes all the finer descriptions of rice which have a small grain. It takes longer to ripen than the inferior sorts, and the crop is cut in November. The "Gurwa" rice crops are more valuable than the "Hulwa." The "Hulwa" rice has a large coarse grain, and is usually cut in October. A kind of rice called "Panpeek," which is cut in the middle of September, is included in the "Hulwa" description; it is the poorest description of rice of this class.

I.—Scale of Valuation.

Colour of Soil.	One cubit deep. Value in annas.	Three-fourths cubit deep. Value in annas.	Half cubit deep. Value in annas.	One-fourth cubit deep. Value in annas.
1	2	3	4	5
First Order.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Yellowish Red .. / Brown and Blackish Red	0 8 0	0 7 0	0 5 6	0 4 0
Second Order.				
Red and Black	0 6 0	0 5 0	0 3 6	0 2 0

Soil of a yellowish red or brown colour, the particles of which are consistent on being dug up, and which has a good water-supply, is to be considered as belonging to the first order. Soil of this description, which has a depth of 1 cubit, is to be at 8 annas or first class, when the depth is $\frac{3}{4}$ cubit at 7 annas, $\frac{1}{2}$ cubit 5 annas 6 pies, and $\frac{1}{4}$ cubit 4 annas. Soil of the first order, having a depth of 1 cubit, $\frac{3}{4}$ cubit, or $\frac{1}{2}$ cubit, but which contains gravel, is to be given one fault and reduced one class, and where the depth is only $\frac{1}{4}$ cubit, it should be entered as belonging to the second order.

2. Reddish soil, which generally has little consistency on being dug up, and blackish soil with large fissures, the clods of which when dug up are hard, tough, and heavy, are to be considered as belonging to the second order, and are to be valued as follows:—

1 cubit deep	6 annas.
$\frac{3}{4}$ " "	5 do.
$\frac{1}{2}$ " "	3-6 pies.
$\frac{1}{4}$ " "	2 annas.

High-lying land, the soil of which is yellow, of any depth, but which has no water-supply, is to be valued according to its productive capability.

II.—"Jalwut Land."

3. "Jalwut" land is that in which, from excess of moisture, the crops are liable to rot. It may be known by the kind of grass which is always found growing on it; in some cases the soil is always muddy and full of moisture. This kind of soil should be considered as of the second order, and both soil and water should be reduced one or two classes according to the amount of moisture in the soil.

4. There is another kind of "Jalwut" land which does not always remain moist, but becomes friable in the hot weather. This description of soil should be entered under the second order, and both soil and water should be reduced one class on account of the fault of excessive moisture.

III.—Rice Land affected by Salt Water.

1. Land in which the crop is damaged by salt water, but where the presence of the salt is only discovered on digging, should be placed in the second order, and the soil and water both reduced one class.

2. In land where the presence of salt is detected on the surface, the valuation of soil and water should be reduced one or two classes in proportion to the extent of the damage. In places where at high tides the sea water floods the soil, the valuation of soil and water should be reduced two or three classes.

3. Land usually covered with water, but which is occasionally cultivated, should be classed at two annas, no valuation being put on for water.

4. In the same way that the soil is classed according to its capabilities, so must the extent of the water-supply be taken into consideration, and the value in annas entered on the right side of the figure. The value of each class is as follows :—

Class.	Annas.
I	8
II	6
III	4
IV	2
V	0

5. The following is the explanation of the manner in which the class of the water is to be determined :—

1st.—In fields which are well embanked and the drainage good, where the crops are not liable to injury from a cessation of rain for a period of 15 days, or where " Gurwa " crops, such as Ambemore, patni, etc., are usually grown, water is to be considered as 1st class and valued at 8 annas. Should a " Hulwa " crop be found in fields having good soil, and a full water-supply as mentioned above, the crops should not be taken into account, and the water should be classed as 1st class.

2nd.—The water should be classed as 2nd class and valued at 6 annas in fields which will not bear a " Gurwa " crop with certainty, but which are well embanked and have a good supply of water, and bear a full crop of " Hulwa " rice, such as " Hulwa," " Patni," " Buksha," etc.

3rd.—In high-lying fields in which " Hulwa " crops are grown, but in which the supply of water is too limited to produce a full crop, the water should be classed as 3rd class, and valued at 4 annas.

4th.—In high-lying fields which have no drainage, which receive only the rain which actually falls on the surface, or in fields which are not level and have no embankments to retain water, the water should be classed as 4th class, at 2 annas.

5th.—In high-lying rice lands without embankments, which have too great a slope to allow of water remaining on them, no value to be given for water.

6th.—The different classes of water are to be valued as above, with the following exceptions :—

1st.—In some rice lands there is sufficient natural moisture in the soil to allow of sugarcane being grown occasionally, or a second crop of grain or of pulse after the rice has been cut. Fields of this description should be classed according to the above-mentioned rules, and an extra valuation of 2 annas added on account of the second crop.

2nd.—The water rate should be raised one class in fields which get the drainage of hills or of village sites, and in consequence bear better crops, or are not affected in case of a failure of rain for twelve or fifteen days. The above is applicable only to fields classed below 1st class.

3rd.—If the extra drainage is likely to injure the crop in any way, the above rule must not be carried out.

4th.—In land which usually grows rice, but which, from some fault in the soil has to be cultivated with a rabi crop every three or four years, or allowed to remain fallow, the land should be entered under the second order and the water reduced one class, except in cases where the water is of the 4th class.

5th.—In fields where water collects to such an extent that frequently rice cannot be grown, but a rabi crop is usually raised, the soil should be entered as second order, and the water as 4th class.

6th.—In fields where water collects to such an extent as to injure the crop, the water should be reduced one or two classes, according to the extent of the injury.

IV.—Rules for the Classification of Rabi Land in which Rice Crops are grown.

1. When there is a proof that land in which, in lieu of a rabi crop, rice has been cultivated, and has given crops for three years out of five, it should be entered in the first or second order of rice land, according to its valuation, but the water should be invariably reduced one class, excepting the 4th class as, for example, a " rabi " pôt number has been cultivated with rice for three years in succession, and the crop being a " Gurwa " patni one the water rate would be 8 annas according to the rules, but this should be reduced one class, viz., 6 annas.

2. Land which has only been cultivated for one or two years with rice is to be classed as first or second order, according to its capabilities, and the water classed as 4th class (2 annas). Information regarding the land described above must be got from the " Pahani-Kharda " or

from the cultivators themselves, and when land is classed according to these rules, a remark should be made in the classer's book to the effect that the land is entered as rabi in the records, but that as it is now cultivated with rice it has been classed in accordance with the foregoing rule.

V.—Rules for the Classification of Rice Land in which Sugarcane and Waingun is cultivated by means of irrigation from Tanks, Nalas, or Wells.

1. In some land sugarcane is cultivated at intervals of two or three years by means of irrigation from "pats," i. e., water-courses. In soil of this description all the land under the "pat" in which sugarcane is raised in rotation should have an extra valuation of 4 annas added on to the classification.

The above rule is also applicable to such lands when only brinjals or other vegetables are raised.

2. All lands that are capable of being irrigated from wells by means of "Rahats" or "Ukhlis" should have an extra valuation of 2 annas added on to them.

3. In lands where there is a sufficient supply of water from the "pat" for the cultivation of "waingun" (that is, a summer rice crop), 6 annas extra is to be added for the water of the pat.

4. In cases where a large nala of 15 or 20 haths broad crosses the course of the "pat," and the water has to be carried over in a trough, or where several small nalas cross the line of the "pat," or where the water about the end of the season requires to be raised to the level of the pat by hand, the valuation of the water should be 4 annas only.

5. In rice land where "waingun" or "gimwas" (that is, nagli or kulith, etc., grown in the hot weather) is grown by irrigation from a well or "ukhli" 2 annas extra is to be added for the water.

6. Where "gurwa" is grown by irrigation from a pat, 4 annas is to be added to the classification on account of the water.

VI.—Rules for "Kharab."

The classer should notice in every pôt number whether the measurer has made correct deductions on account of "bandhs" and unculturable land, and in case he has not done so, he should re-measure and correct the deductions.

Bandhs of less breadth than one cubic need not to be deducted.

The area of large stones and "katul" (sheet rock) should be carefully estimated by sight, and deductions made accordingly.

VII.—Rules for the Classification of Rabi Land.

There are two kinds of rabi land, "Bandni" and "Malkandi."

The former is embanked like rice land, but on account of excess of water in the rains, rice cannot be grown.

"Malkandi" land has no bandhs, but is open land like jerayet, and is generally on the banks of creeks or nalas. All "malkand" lands that are only flooded by fresh water, and on which silt is found, should be classed as "bandni rabi."

The abovementioned lands are to be classed in the same way as lands classed above the Ghats by the following scale :—

Annas of Valuation	16	14	12	10	8	6
Bandni, depth in cubits	$1\frac{1}{2}$	$1\frac{1}{4}$	1	$\frac{3}{4}$	$\frac{1}{2}$	..
Malkandi, depth in cubits	..	..	$1\frac{1}{2}$	$1\frac{1}{4}$	1	$\frac{3}{4}$

The valuation is to be made according to the depth as given above, but the valuation is to be lowered for the following faults :—

Kind of fault.	Sign.	Reduction in Value.	
		Bandni.	Malkandi.
Denotes a peculiar mixture more or less impervious to water.	∧	1	0
Denotes liability to be swept over by running water.	∼∼∼∼	1	1
Denotes a mixture of sand	∨	1	1
Denotes an excess of moisture from surface springs .	□	1	0
Denotes a mixture of limestone	∵	1	0

The above faults must be looked for in classing rabi soil.

VIII.—In some places Sugarcane is grown in Rabi Soil and the Valuation is to be raised according to the following Rules.

1. Where there is certainly sufficient moisture in rabi lands to raise a sugarcane crop every two or three years, 12 annas should be added over and above the value of the soil. As for example, bandni rabi lands $1\frac{1}{2}$ cubits in depth, without a fault, is 16 annas, and 12 annas for sugarcane grown every two or three years, making a total of 28 annas. If Malkand land, 12 annas for soil and 12 annas for sugarcane, making a total of 24 annas.

2. The soil which does not produce a full crop of sugarcane or where sugarcane is only grown at regular intervals of five years, 8 annas only are to be added.

3. Where sugarcane is only occasionally grown, 4 annas only are to be added.

4. A remark stating that sugarcane is grown should be made in the figure of all rabi numbers classed in accordance with the foregoing rules.

IX.—Rules regarding the Valuation of Water in Lands irrigated from Tanks, Nalas, or Wells.

1. Fields which have an unfailing supply of water from a tank or stream, and which flows of itself through a "pat," and which produce 1st class crop of sugarcane and plantains should have a water rate of 8 annas added.

This water rate (8 annas) is also applicable when brinjals or other vegetables are grown.

2. The second class of the same description as the above, except that, in consequence of the water not being sufficient for sugarcane, brinjals, onions, and other vegetables are grown, or where at the end of the season there is not sufficient water to flow into the pat freely, and it has to be raised to the level of the pat by hand. In these cases the water is to be considered as second class, and the water rate on the land, which is cultivated in rotation, should be 8 annas.

3. The third class includes two kinds : 1st, where the water cannot flow into the pat naturally, but has always to be raised by a bucket ; the 2nd is where water has to be raised from a well by a "rahat" or "môt," or any other machine.

Irrigation by either of these means is to be considered as third class, and the water valued at 4 annas.

4. In cases in which water is allowed out of charity to be brought in pots from wells, no valuation is to be made, but in all other instances the water brought in pots, whether from a well belonging to the owner of the number, or from a well the common property of the village, from a tank or from a river, etc., is to be valued at 2 annas.

X.—Rules for the Classification of Rice or Rabi Land irrigated by Water from a Pat, etc., but where the Area cultivated is very small.

1. In places where small patches of brinjals, etc., are watered by hand, and where the area is so small that if a separate share were made the average water rate for the number would not be raised more than 3 pies, no extra valuation need be made for the water, but if it exceed 3 pies, then it should be added on, and a note made of it under the plot.

2. Rice and rabi lands not usually cultivated by irrigation from pats or wells are to be treated in the manner mentioned above, where the area is very small

3. When newly made rice and rabi land, which is only occasionally cultivated, is met with at the time of classification, it need not, if in detached pieces of less than 2 gunthas in extent, be measured, but if regularly cultivated it should be made into a separate number. Newly made rice land, if adjoining a number, should be included in the adjoining pôt number, or made nto a pôt number according to circumstances.

4. If two or more detached pieces of newly made rice land, each of a guntha or more in extent are found close to each other, they should be made into a separate number.

XI.—Rules for "Kharab" in Rabi Land.

Bandhs are not to be deducted in rabi land, because it is usual to cultivate them with nagli, etc., but nalas, rocky ground, and unculturable land is to be deducted. The classer should notice whether the deductions made by the measurer are correct or not, and if not, he should deduct the "kharab" after measuring it.

XII.—Garden Lands.

There are two kinds of garden land, "Agri" and "Dongri," the classification of which is to be made according to the following rules :—

Agri Bagayat.

1. The first class is sandy soil, which has a slight admixture of earth and a depth of 1½ cubits—value 8 annas.

2. The second class is a reddish soil mixed with sand, 1½ cubit deep, or it may consist of fine white land, having the same depth—value 6 annas.

3. The third class consists of undulating poor white sandy soil, 1 cubit deep—value 4 annas.

4. The fourth class consists of uncultivated white sand—value 2 annas.

5. "Agri bagayat" is divided into four classes as above, but in some places the soil on being dug out to the depth of one cubit is found to contain "Karal," i. e., soft sandy stone, or has limestone mixed with it. For this fault it should be reduced a class. Another fault is where, on digging this soil to the depth of a cubit, hard sandstone is found ; in this case it should be reduced two classes, but if of the second class it should be reduced only one class. Thus if in any way the depth is found deficient the class is to be reduced, but if the faults occur at a greater depth than 1½ cubits no notice need be taken of them. In classing care should be taken to divide the number into equal shares.

Dongri Bagayat.

6. In "Dongri bagayat" the soil is red, and does not contain any sand. That land, when level and one cubit and upwards in depth, is to be considered as first class, and valued at 8 annas.

7. Second class is the same as above, except that the depth is from ¾ to ½ a cubit, or when the soil is one cubit or ¾ of a cubit in depth but sloping, it should be entered in the second class, and valued at 6 annas.

8. Sloping ground ½ a cubit or ¾ cubit deep, but which is hard or has "moorum" mixed with the soil, is to be considered as third class, and valued at 4 annas.

9. Ground which slopes very much and has a depth of ½ a cubit or less, and has small stones mixed with the soil, is to be classed as 4th class, and valued at 2 annas.

10. In classing "agri" or "dongri" bagayat, if the supari and coconut trees are exposed to the south wind, or if the trees are affected by white ants and die in consequence, soil which would otherwise be classed as 1st and 2nd class should be reduced one class, and the reason for doing so should be given in the classer's book. The above is not applicable to the 3rd and 4th class.

XIII.—Rules for the Valuation of Water in Bagayat Land.

1. A first class well is one made of stone laid in mortar, in which the water remains all the year round, and the supply is sufficient for watering the garden every other day, or every third day, as may be required. Water from a well of this description is to be valued at 8 annas.

2. A second class well is either one in which the water lasts all the year, but instead of being built up with stone has a "rahat" or a stand fixed over it, or it may be a pucka built well in which the supply of water diminishes about April, and is only sufficient to water the garden once in eight days. Water from these kinds of wells is to be valued at 6 annas.

3. Third class wells may be either "pucka" or "kutcha" built, but the water-supply in them becomes less in March, and in April there is only enough for perhaps one watering, and in May they are quite dry. Water from this description of well is to be valued at 4 annas.

4. Fourth class wells may be either "pucka" or "kutcha" built, but the "rahat" is only used for two months after the rains, or the water may be taken up in pots and will last for about three or four months. Wells of the 1st or 2nd class, which are near houses, and are used chiefly for drinking purposes, but which also supply water to a very few trees or a very small patch of vegetables, should also be considered as 4th class, and valued at 2 annas.

5. Wells in the villages on the sea coast generally contain brackish water. This is not a fault for which any reduction should be made in the valuation, but a remark should be made regarding this in the classer's book, where the description of the well is shown.

6. Well water is to be classed according to the foregoing rules, unless the area irrigated is small, that is to say, about 20 gunthas or under. In this case valuation is to be raised one class on account of the smallness of the area. For example, a well of the 3rd class, having one "rahat," irrigates only 15 gunthas of land; therefore the well should be classed as a 2nd class one, and a remark to this effect made in the description of the well in the classer's book. Where the area irrigated is above 20 gunthas the class is not to be altered—this rule is applicable to all the classes, with this exception, that a well, the sides of which are not built up, and which would properly belong to the 2nd class, is not to be raised to the 1st class.

7. A well "pucka" built, in good order, which has not been used for some years, is to be classed according to the supply of water, and a remark made in the classer's book, and "bagayat" statement showing the number of years the well has been out of use. If it should have fallen in at all, it should be classed one class lower on this account.

8. As mentioned above, wells are to be classed by estimating the supply of water. The area of land under a well must also be considered, and the following scale shows what additions or reductions are to be made on this account.

One and a half acres has been fixed as the maximum area which one "rahat" worked by a bullock is capable of irrigating, but in some numbers a large area may be found under one well. In this case the shares are to be made as shown in the following example:—

Area in Acres.		Shares.		Water Valuation.
$1\frac{1}{2}$	..	1	..	8 annas.
$1\frac{1}{2}$	..	1	..	0 ,,
		2		8
				Average 4 annas.

In this example the area of land under the well is 3 acres, and the well is a 1st class one, having one rahat. The land is divided into two shares, in one of which the water is classed at 8 annas, and in the other 0. The average is taken as the value of the water in the whole number.

In the same way, in a 3-acre number, with 2nd class well (6 annas), the value for the whole number is 3 annas; this rule is applicable to all the classes of wells.

9. The area of land which can be irrigated by one rahat worked by manual labour is 20 gunthas, but here the water is to be classed according to the rules given above, if the size of the well is large enough to admit a "rahat" which can be worked by a bullock, and the supply of water is sufficient to last to the end of the season; the well in this case must be held to be a 1st class one, and the shares are to be made as follows:—

Area. A. g.		Shares.		Water Valuation.
0 20	..	1	..	8 annas.
1 20	..	2	..	0 ,,
		3		8
				Average 2 as. 8 pies.

This example applies to all different classes as also to the acres.

XIV.—Rules for the Classification of Water from Pats.

1. There are four classes of pats: 1st, 8 annas; 2nd, 6 annas; 3rd, 4 annas; 4th, 2 annas.

1st.—When there is a stone and an earthen dam in the stream at the head of the "pat," and the supply of water is ample for watering every second or third day, the pat is to be considered as a first class one, and the water is to be valued at 8 annas.

2nd.—A "pat" which has a full supply of water, but which is carried across a large "nala" by means of a trough, or if the supply of water lasts only till April, and is not

afterwards sufficient for watering the garden properly, the "pat" is to be entered as a 2nd class one—value 6 annas.

3rd.—If the water in the "pat" can be fully supplied up to March, but afterwards decreases as much as to necessitate a reservoir for the collection and flow of sufficient water, the "pat" should be entered as a third class one—value 4 annas. When the supply of water to a "pat" is deficient, or has to be raised into it, the "pat" should be considered a third class one.

4th.—If the supply of water in a "pat" only lasts up to the month of January or February, then it is to be considered a fourth class one, and valued at 2 annas.

XV.—Rules for the Classification of Wells or "Pats" where the Wells or "Pats" are not Private Property.

1. When a public well has been included in a number, or when the water of a well or of a tank adjoining is used for irrigating a number, the water should be classed according to the rules and the reasons are to be entered in the classer's book.

2. In cases in which water is allowed out of charity to be brought in pots from wells, no valuation is to be made, but in all other instances the water brought in pots, whether from a well belonging to the owner of the number or from a well the common property of the village, from a tank or from a river, etc., is to be valued at 2 annas.

3. Where the water in the well or "pat" of any number is not owned by the person who uses it, but is given to him out of charity, or is paid for by him, no valuation should be put on it, but a remark to this effect should be made in the classer's book.

4. In numbers exceeding 1½ acres in extent with only one "rahat" to the well the calculation of the shares is to be made as above; but in numbers of less than 1½ acres, in which the water will not flow over the whole surface owing to a portion being above the level to which water will flow, the high-lying portion of the land is to be measured, and the water required for it is to be classed at 2 annas, but at its proper valuation for the remaining portion of the land.

For example, in a number of 1 acre 15 gunthas having one "rahat," the water from which flows over only 33 gunthas, but the remaining 22 gunthas are high-lying land—

	Shares.	Value.	Total value in annas.
then in 33 gunthas there are	3	8	24
and in 22 gunthas ..	2	2	4
	5		28

Average for whole, 5 as. 7 pies.

5. The above rules are applicable to "Agri" and "Dongri" bagayat. The only exception in "Dongri" bagayat is that where the land is above the level of the water, and there is no cultivation whatever in it, then that land is to be deducted out of "bagayat" and included in "warkas."

6. "Dongri" bagayat land under a well or "pat" which is not cultivated should be entered as "warkas."

7. In a number in which there is a well with a "rahat" on it, and the acreage of which is less than the stipulated area which a well is capable of irrigating, and the owner has more land near enough to be watered by the well, then such land will be liable to the water rate. As for example, a number 1 acre and 10 gunthas has a 1st class well; the area it should water is 1 acre and 20 gunthas; then if the owner has another garden land close by, 10 gunthas of it should be put down as capable of being watered.

8. If coconut and supari trees are grown on the "bandhs" of a rice field and it is usual to water the trees, then the land on which the trees stand should be measured, and the garden and rice area shown separately. The garden land should be classed according to the rules for classing bagayat land. If there are only a few trees, and they are not watered, the land should not be measured as "bagayat," but the name of the owner and number of trees should be entered in the classer's book.

9. In survey numbers or "pôt" numbers, in which there are several houses and a few trees between the houses, the whole space covered by the houses should be entered as "wasahat" or inhabited, and the number and kind of trees entered in the names of the owners. If there is a well in the number the ownership, class, and means of drawing water, whether by "rahat" or pots, should be recorded in the classer's book. Should there be a portion belonging to one owner, the boundary of which can be defined, it should be made into a separate "pôt" number, and classed according to the rules.

10. In land in which there are a number of trees belonging to several owners, and it is not possible to measure the land according to each man's holding, the whole of the land should be

measured and classed as one "pôt" number, and a record of the trees made as directed in para. 8.

11. In classing, should a newly made piece of bagayat be discovered, if convenient, it should be included in the adjoining "pôt" number, if not, it should be made into a separate "pôt" number; scattered pieces of bagayat should have up to 5 gunthas of warkas land included with them and then be made into a separate survey or "pôt" number, boundary stones being put down according to the rules for the separate survey number.

12. Deductions on account of "karal" in bagayat to be made according to the rules for rice land.

13. Warkas land on the banks of "nullahs," etc., in which sugarcane is grown should be classed and entered as dongri bagayat, the water of the "pats" and wells being classed as follows.

14. If land is cultivated at intervals of one or two years, the water of the "pat," being ample for the crop, is to be classed at 8 annas.

15. If sugarcane is grown only every four or five years, the water, being sufficient, is to be classed at 6 annas; but if grown at longer or irregular intervals, the water is to be classed at 4 annas.

16. If the water is supplied from a well whether built up or not, and is sufficient for a crop at intervals of one or two years, it is to be considered as 2nd class (6 annas). If the crop is raised at intervals of four or five years, then the water is to be classed at 4 annas (3rd class), and at 2 annas (4th class) if at longer and irregular intervals.

XVI.—Rules for the classification of "Warkas" Land.

1. Two kinds of land are included in "warkas," viz., "bhatle" and ordinary "warkas" or hill land, and are to be classed as follows :—

	As.	As.	As.	As.	As.	As.
Classification Valuation ..	6	5	4	3	2	1
Bhatle Land	1/1	2/2	..	..	..	..
Warkas Land	..	..	1	2	3	4

Explanation.

"Bhatle" land is flat, soil about 1 cubit in depth. It is usual to cultivate it regularly every year and every now and then. Tur is grown on it. Land of this description is to be considered $\frac{1}{1}$st bhatle, and valued at 6 annas.

2. When land of the above description is from $\frac{3}{4}$ to $\frac{1}{2}$ a cubit deep it is 2nd bhatle, and is to be classed at $\frac{2}{2}$, and valued at 5 annas.

3. First class "warkas" land is either flat or may be slightly sloping, and has a fair quantity of soil, which will grow the different warkas crops in rotation, or, if when fallow, will grow the best grass. It is valued at 4 annas.

4. Second class "warkas" land is chiefly sloping. It is sometimes flat and slightly stony, and is alternately cultivated and left fallow for grass. This kind of land is to be classed at 2nd class, and valued at 3 annas.

5. Third class "warkas" land is usually very sloping. Trees and brushwood generally grow upon it, and it requires a fallow of several years before it can be cultivated. It is also sometimes flat and very stony, with the soil red, on which little grass and few bushes grow. This description of "warkas" land is to be valued at 2 annas.

6. Fourth class "warkas" land consists of the steep sides of large hills which are covered with boulder and cultivated, or if flat is nearly all sheet rock, with small patches of brushwood. The 4th class is valued at 1 anna.

Kharab in "Warkas" Land.

1. In making the "Phalni," i. e., sub-division of "warkas" land according to individual holdings, all rock, nullahs, and other uncultivable area must be carefully estimated and deducted.

XVII.—Miscellaneous Rules and Explanations.

1. In rice, garden, or rabi numbers the classification of the included "warkas" land is to be entered in the 5th column of the classification book, and the area of each separate holding

is to be calculated with an area-comb, and the figure is to be copied into a separate "phalni" book. The "kharab" is to be estimated and deducted in the usual way.

2. Warkas survey number should be plotted and classed in the classer's book, and the different shares shown. The area of each separate holding is to be calculated with the area-comb and entered in the "phalni" book.

3. "Kurans," i. e., grass numbers, which are sold by auction every year are to be shown in the classer's "phalni" books, but the "phalni" and classification are not to be entered. Below the figure a remark should be made stating that as the number is a "kuran" it has not been classed.

4. The figures of forest reserve numbers should be entered in the classing and "phalni" books, but not classed. A remark showing that the number is included in the reserve is to be written below the figure.

5. Government "khanjans," i. e., salt marshes, are to be treated in the same manner.

6. Burial grounds less than 20 gunthas in extent may be included in a survey number, but shown as a separate "phalni" "tukda" (i. e., piece), and should be entered as "kharab," uncultivated. If above 20 gunthas, a separate survey number should be made, and a remark made as in paragraph 3.

7. "Rahats" or "Dungs," i. e., sacred groves, if below 20 gunthas in extent, may be included in a survey number, but a separate "phalni" "tukda" should be made of it, and the whole area shown without deductions. If above 20 gunthas, a separate survey number is to be shown in the column of arable acres, but the number should not be classed, and a remark showing that it is a sacred grove should be made in the "phalni" and classer's books.

XVIII.—Regarding the Original Boundaries of Fields, etc.

If at the time of classification it appears, from the shape of a field, that the area is more or less than that shown in the measurer's book or register, the calculation should be examined and corrected, if necessary. If there is no error in the calculation, but if from the plot there is a doubt about the area, the number should be re-measured; also if it appears that the number has not been measured according to the true boundaries, or according to the present *vahivat*, i. e., occupation, it should be re-measured and entered in Statement No. 3. A remark showing that a correction has been made should be written in the books.

2. At the time of classification each number on the original village map is to be examined, and all mistakes are to be at once corrected. A description of the nature of the error is to be made according to Form No. 4, in order that the fair map may be corrected.

3. All the numbers in a village are to be examined, in order to find out whether or not they have been made according to the rules, and all mistakes discovered are to be reported to the Assistant in charge of the office, and corrections made according to the orders received from him.

4. At the time of the classification the field boundary marks should be examined and compared with those shown in the measurers' books, and any stones that may have fallen down are to be properly fixed. When any stones are wanting, a report is to be made to the Assistant in charge of the office, and an account (Form No. 5) of the number of stones and cost of erecting them again sent in.

5 At the time of the classification an examination of the entries regarding the names of fields and occupants is to be made, and where differences are discovered they are to be corrected. In khalsa villages the names of fields and occupants are to be taken from the Talati's books.

XIX.—Instructions as to how the Classing and other Books are to be kept.

1. The manner in which the classing books are to be kept, and entries regarding the correctness of measurer's books, maps, and boundary marks are to be written, is given in Form No. 1.

2. At the time of classification khalsa land is to be entered as cultivable or waste, as the case may be, but waste lands for which a "razinama" (resignation paper) has not been given should be entered as cultivated. In khoti land all lands, whether cultivated or waste, are to be entered as cultivable. If land is not actually occupied, it is to be entered as "khoti-nisbat" waste, and in the Bhaganna statement the number is to be shown as cultivable.

3. In the Bhaganna statement rice, "rabi," bagayat, and warkas land are each to be shown in separate forms (No. 2).

4. Mistakes discovered in the books are to be shown in Form No. 3.

5. Mistakes in the maps are to be shown in Form No. 4.

6. Entries regarding boundary marks are to be shown in Form No. 5.

D.

THE KANARA MEASUREMENT AND CLASSIFICATION RULES.

Note.—No Revision work has been done in Kanara, hence the Rules are those of the Original survey of the district.

The Classing Rules apply to below-Ghat talukas only. As has, however, been pointed out in the Survey and Settlement Manual, Part II, Chapter VII—The Kanara System of Classification—there are considerable variations found from these Rules even in the talukas to which they were professedly applied.

M H 1700—44

KANARA MEASURING RULES.

CONTENTS.

SECTION I.

Rules relating to Tenures.

Rule 1.—The total assessment paid to Government by an individual in one village is called 'Warg," hence it arose that in course of time people called this land a Warg. In other districts such land is called a "Khata": Warg and Khata both mean the same thing; an entry in the village accounts is called a "Khata," and hence the origin of the term.

Rule 2.—The man in whose name a Warg has stood in the village accounts from ancient times is called a "Muldar" or "Muli Wargdar." In Survey work no difference is to be made between Muli Wargs and other Wargs.

Rule 3.—If a Wargdar makes over his land to another person for ever, or for a term of years at a fixed rent, the paper on which the agreement is drawn up is called a "Mulgeni Patra" and the man to whom the land is made over is called a "Mul Genidar."

Rule 4.—A man who cultivates land by the year without a written agreement is called a "Chal Genidar" and his right to hold the land is termed "Chal Geni." There is no difference between a "Chal Genidar" and a "Wahiwatdar."

Rule 5.—All the land belonging to one Warg must be measured separately: on no account may the land of different Wargs be included in the same Revenue Survey number.

Rule 6.—The land held by a Mul Genidar is to be measured separately; on no account is it to be included in the same Survey number with land of another Mul Genidar, although in the same Warg.

Rule 7.—Portions of land adjoining one another and belonging to different Wargs, though held by the same Mul Genidar, must be made into separate Revenue Survey numbers.

Rule 8.—When a number of different Chal Geni holdings are met with in one Warg or Mul Geni holding, there is no objection to including all, or as many of the Chal Geni holdings as may be necessary, to form a number of the size laid down in the rules. But if a Warg or Mul Geni holding, having Chal Geni holdings in it, has to be broken up into two or more numbers, the boundaries of the Chal Geni holdings should be made use of in dividing it into Survey numbers.

Rule 9.—In some cases lands of different Wargs adjoining one another are held by the same Mul Genidar, and it is impossible to lay down the boundaries of the Wargs. In such cases there is no objection to making the whole of the land into one Revenue Survey number, subject to the rules for limiting areas of Survey numbers. But the circumstance must be reported to the Assistant Superintendent, and a remark made in the fair field book stating that officer's sanction to the work.

Rule 10.—*Kreyagar.*—These holdings are to be considered the same as Mul Genidars and divided according to the same rules.

Rule 11.—If a Wargdar has mortgaged his land, and the mortgagee's name is entered in the accounts, and he also pays the assessments, then the whole of the mortgaged land must be made into separate Revenue Survey number according to its area.

Rule 12.—Clause 1.—When a Warg is held by a brotherhood and the Mul Geni rights are entered in the name of one brother, the measurer must measure the number as though it belonged to one man.

Clause 2.—When a part of a Warg is held by a brotherhood in virtue of a stamped and registered deed, and there is separate possession in the field, it should be measured, if the holder thereof wishes, into a separate Survey number, without regard to the unwillingness of the Khatadar; but if such deed is not registered, the land is not to be measured into a separate Survey number unless the Khatadar gives his consent to that effect in writing. In both cases the land is to be measured into a separate Survey number according to occupation in the field, subject to the rules for limiting the areas of Survey numbers; and such measurement is to be made on payment of expenses as provided for in Rules 1 and 2 of Section IX of the Revision Survey Rules.

Rule 13.—When several Wargdars have sub-let a field to one or more Mul Genidars, and share the whole of the crop, and there is no means of finding out the different shares in the field, then measure according to the Mul Geni boundaries, subject to the rules for limiting areas of Survey numbers; but each case of this kind must have a remark entered in the measurer's books, and be reported to the Assistant Superintendent.

Rule 14.—Whenever small holdings are met with, which under the above rules would be required to be made into separate Revenue Survey numbers, but are under one acre in area, they are not to be made into separate Revenue Survey numbers, but are to be measured according to the following rules.

Rule 15.—As many of these holdings as will make a Revenue Survey number up to about one acre are to be measured and included in one Revenue Survey number, each holding being made into a separate Pôt number, the measurement of which will be conducted and recorded exactly as if it was a Revenue Survey number, except that it will not be separately shown on the village map.

Rule 16.—Each Pôt number must be measured separately, and if a rayat holds two or more detached holdings in a Revenue Survey number, each of these holdings must be measured into a separate Pôt number. In entering the acres in the fair field book, the total area of each Pôt number must be shown, the amount of "Pôt Kharab," if any, must then be deducted, and the area of each description of land entered. If a Pôt number contains mixed description of soil, the area of each kind must be shown.

Rule 17.—If there are wells or houses in Pôt numbers their area and position must be fixed by actual measurements.

Rule 18.—The name of any person entered in the village records as the occupant of a Pôt number must be entered in the measurer's books as that of the occupant of that Pôt number.

Rule 19.—The following is an example of how the entries for Pôt numbers are to be made:—

Pôt Number.	Total area.	Dry-crop.	Garden.	Rice.	Pôt Kharab.	Remaining culturable Acres.
	A. g. a.	A. g. a.	A. g. a.	A. g. a.	A. g. a.	A. g. a.
1 ..	0 6 0	0 4 0	....	....	0 2 0	0 4 0
2 ..	0 5 0	0 5 0	....	....	...	0 5 0
3 ..	0 9 0	0 6 0	....	....	0 3 0	0 6 0
4 ..	0 16 0	0 2 0	0 12 0	....	0 2 0	0 14 0
Total 4	0 36 0	0 17 0	0 12 0	....	0 7 0	0 29 0

Mixed Descriptions of Soils.

Rule 20.—One acre of garden land is to count as 2 acres of rice or Gajni or 4 of dry-crop; and one acre of rice or Gajni to count as 2 acres of dry-crop.

Rule 21.—When measuring mixed description of land, in order that it may be seen at the time of test whether the different kinds of cultivation have been properly separated, small stones daubed with whitewash, or where stones are not at hand clods of earth daubed in the same way, should be placed by the measurers on the lines of boundary between the different measurements.

SECTION II.

Rules for the Division of Land below-Ghats.

Cultivated Land.

Rule 1.—Cultivated dry-crop land, if belonging to one Warg and one Mul Genidar, to be divided into Revenue Survey numbers up to 10 acres.

Rule 2.—Cultivated rice and Gajni land, if belonging to one Warg and one Mul Genidar, to be divided into Revenue Survey numbers up to 10 acres.

Rule 3.—Cultivated garden land, if it belongs to one Warg or one Mul Genidar, to be divided into Revenue Survey numbers up to 5 acres.

Rule 4.—A Chal Geni, if of or exceeding 6 acres in dry-crop, 3 acres in rice, or one acre in garden land, must be made a separate number.

Rule 5.—Wherever land formerly used for the manufacture of salt is met with, it should now be considered Gajni and measured accordingly.

Rule 6.—In some villages the Gajni land is cultivated in long strips from 20 to 30 chains in length and from one anna to a chain in width; in such land Revenue Survey numbers must not be made less than 4 chains wide, and in order to obtain a Survey number of this size it does not matter how many holdings are measured into a Survey number, but each holding must be measured as a separate Pôt number. Special attention must be given to seeing that the single corner stones in Gajni land are of the full size ordered in Rule 16, Section VII.

Rule 7.—Land covered with water at high tide, and uncovered at low, if suitable for Gajni cultivation, is to be measured; but if unsuitable for Gajni cultivation, it is not be measured. Land always covered with water is never to be measured.

Waste Land.

Rule 8.—Government waste arable dry-crop land is to be divided into Revenue Survey numbers up to 10 acres.

Rule 9.—Government waste rice land is to be divided into Revenue Survey numbers up to 3 acres.

Rule 10.—Government waste garden land is to be divided into Revenue Survey numbers up to 3 acres.

Rule 11.—Pulan land, i. e., sandy soil on the sea-shore, or near the mouths of rivers, capable of being made into rice or garden land, is to be divided into Revenue Survey numbers up to 5 acres.

Rule 12.—Government waste Gajni land is to be measured into Revenue Survey numbers up to 25 acres.

Rule 13.—Open dry-crop land with little or no forest, and fit for, or used for, little but grazing, is to be divided into Revenue Survey numbers up to 60 acres.

Rule 14.—The land on which *kaju* and *undi* trees grow is to be considered dry-crop, and divided according to rules for dry-crop.

Rule 15.—All land below Ghats is to be measured according to the above rules, even though it belong to a village or Majreh of a taluka above Ghats.

SECTION III.

Rules for the Division of Land above Ghats.

Rule 1.—Cultivated dry-crop land, when all the land is held by one Wargdar or Mul Genidar, is to be divided into Revenue Survey numbers up to 15 acres, provided it is all cultivated by one Wahiwatdar or Pôt Karda. If cultivated by more than one Wahiwatdar or Pôt Karda as many of their holdings may be included in one Revenue Survey number as will make it up to 10 acres.

Rule 2.—Cultivated rice land, if it is all held by one Wargdar or by one Mul Genidar, is to be divided into Revenue Survey numbers up to 7 acres, provided it is cultivated by one Wahiwatdar or Pôt Karda. If cultivated by more than one Wahiwatdar or Pôt Karda, as many of their holdings may be included in one Revenue Survey number as will make it up to 5 acres.

Rule 3.—Cultivated garden land is to be divided into Revenue Survey numbers up to 2 acres, provided the land is all cultivated by one Wahiwatdar or Pôt Karda, but if cultivated by more than one Wahiwatdar or Pôt Karda, as many of their holdings may be included in one Revenue Survey number as will make it up to about one acre.

Rule 4.—If a holding, whether dry-crop, rice, or garden, has to be made into two or more Revenue Survey numbers from the acres being in excess of those above fixed as the limit of one

Revenue Survey number, boundaries as enjoyed by existing Wahiwatdars or Pôt Kardas must be carefully respected : a portion of one Wahiwatdar's or Pôt Karda's land must never be cut off and included within that of another in one Revenue Survey number, notwithstanding that it may be necessary to make a Revenue Survey number half an acre smaller or larger than the area above laid down.

Waste Land.

Rule 5.—Dry-crop waste land is to be divided into Revenue Survey numbers from 7 to 15 acres. If there are more than 15 acres of waste land, it must be divided into two or more Revenue Survey numbers, and each number should be about 10 or 12 acres in area.

Rule 6.—Forest land adjoining cultivated land, in which there are no large or reserved trees, may be measured as waste land, if there is any likelihood of its producing crops when brought under cultivation. Such land should not be measured till the rest of the village land has been measured, and if the waste numbers of the village equal a tenth part of the cultivated numbers then no more waste numbers are to be made; if the waste numbers are less than a tenth part of the cultivated numbers then sufficient waste numbers must be measured to make them up to a tenth part.

Example.

1. There are 50 numbers in a village; of these 40 are cultivated and 10 though previously cultivated are now waste: as the waste numbers exceed a tenth of the cultivated ones, there is no necessity for making new waste numbers.

2. A village consists of 31 numbers; of which 30 are cultivated and one waste: then 2 numbers will have to be made out of the jungle land in order to make up the tenth part.

Rule 7.—Waste rice land is to be divided into Revenue Survey numbers of from 3 to 6 acres. If there are more than 6 acres, the land should be divided into two or more Revenue Survey numbers and these numbers should range from four to five acres each.

Rule 8.—Waste garden land is to be divided into Revenue Survey numbers of from one to three acres. Should there be more than three acres, the land is to be divided into two or more Revenue Survey numbers, and these numbers should be about two acres each.

Rule 9.—Land in which coffee is grown should be made into separate numbers according to occupancy irrespective of area, and considered garden.

Rule 10.—All land above Ghats is to be measured according to the above rules, even though it belong to a village or Majreh of a taluka below Ghats.

SECTION IV.

Rules for the Division of Land.

Rule 1.—Wherever the embankments formerly used for rice cultivation are visible, the land must be measured as rice land, unless the land is covered with large trees, or is quite detached from the cultivated part of the village, in which case this land will be included in the jungle lands.

Rule 2.—In order to straighten the sides of cultivated numbers, pieces of jungle containing large trees must not be included with the cultivated land.

Rule 3.—Wherever land has been cultivated as garden land, but is at present lying waste, it must be measured as garden land.

Rule 4.—When coconut or other fruit trees are planted along one or more of the sides of a house, the land with trees on it together with the house should be made into Revenue Survey number, and the house itself deducted as unculturable land.

Rule 5.—Dry-crop land called "Hakal" is commonly met with. Generally speaking this is not occupied land, but is cultivated one year and left uncultivated for several years, the right of cultivation being either sold by auction or let out on lease: such land should be divided into Revenue Survey numbers up to 10 acres.

Rule 6.—In some villages several Wargdars will give up small portions of Wargs adjoining one another, so as to make up a field for the use of the temple. In such cases if the Wargdars have given a written agreement making over their rights to the land in favour of the temple, then the whole of these pieces may be made into one or more Revenue Survey numbers and entered as belonging to the temple. Should the Wargdars state that they have not agreed in writing to give up their rights to the pieces of land, they must be measured with the Wargs to which they belong as though they had never been made over to the temple.

Rule 7.—Evergreens or "Kans" whether producing pepper or any other jungle produce, or none, must be made each into one Revenue Survey number, of whatever area they may be, and entered as Kan Parampok.

Rule 8.—When measuring the land of Wargdars, Hakal or dry-crop land with large trees is not to be included in the numbers measured with the cross staff, and great care must be taken to see that this is not done: this description of land is always to be included in large jungle or Government waste numbers, and no Hakal numbers are to be made in land with large trees growing on it.

Rule 9.—In some places a man is entered in the village records as holding 10 or 20 gunthas of land; he has enclosed by a hedge or wall some 20 or 30 acres of the surrounding land and has held it for a number of years. In such cases if he claims all the land enclosed it is to be measured and entered in his name; but if he refuses to acknowledge as his up to the wall or hedge, the boundaries which he does acknowledge are to be taken up, and then up to the fence made a separate number.

Rule 10.—In cases when coconut trees are found scattered about in dry-crop and rice land, such detached trees need not be noticed by measurers except to show on the map that there are such trees. No land will be made garden on account of such detached trees.

Rule 11.—If there are no coconut trees on rice embankments the land on which the trees are is to be considered rice land unless the strip is over eight annas in width, in which case it is to be considered garden land.

Rule 12.—In some cases it will be found that where one Chal Genidar or more than one cultivates the land of two or more Mul Genidars or Wargdars, the boundary between the land of each separate Mul Genidar or Wargdar is not known, but the cultivator pays a certain proportion of the crop to each of the superior holders. In such cases no attempt should be made to divide the land of each Mul Genidar or Wargdar into separate numbers; but where there is more than one Chal Genidar, whose boundaries are defined, these boundaries should be adhered to and separate numbers made accordingly, subject to the rules for limiting the areas of Survey numbers. If the boundaries of such holdings are not defined, the following rules must be observed:—

(1) If the land in question is under three acres, it must be made into one Survey number.

(2) If more than three, and less than five acres, into two Survey numbers.

(3) If more than five, and less than eight acres, into three Survey numbers.

(4) If more than eight, and less than twelve acres, into four Survey numbers.

(5) And so on in cases exceeding twelve acres, so as to make Survey numbers of about two to three acres each.

(6) The above acres apply to rice land and garden only; double the area may be reckoned for dry-crop land.

(7) The names of both Mul Genidars and Wargdars must be entered to each and every Survey number made under this rule.

(8) Every case coming under this order must be specially reported to the Assistant Superintendent, who must at once enquire into it, and record below the report his statement, that the land of two or more Wargdars or Mul Genidars is really included in the cultivation of one or more men without separation of boundaries, but only with a certain apportionment of produce.

Byan or Grass Lands.

Rule 13.—Byan or grass lands when recorded as occupied in the village accounts, and when the area so occupied is there entered, will be measured into Survey numbers according to such recorded occupied area, with an addition not exceeding one-tenth. When such occupied areas are small and contiguous to one another, they may be included together so as to make a Survey number of about 10 acres.

Rule 14.—Clause 1st.—When no occupied area is recorded in the village accounts, such "Byan" lands, if the holders thereof agree to point out boundaries of division, should be made into separate Survey numbers according to each man's holding, or included in the same number with his rice, or garden, if adjoining. Should, however, small holdings be met with removed from the rice cultivation, as many of these holdings as will make a Revenue Survey number of about 5 acres are to be measured and included into one Survey number, each holding being made into a separate Pôt number according to Section I, Rules 16 and 17. The name of each holder of a Survey or Pôt number should be entered in the measurers' books.

Clause 2nd.—Should the holders be unwilling to divide the land or unable to point out boundaries, holdings should be included in one Survey number up to 15 acres.

Clause 3rd.—The names of both Khatedar and Wahiwatdar must be entered in the Survey books in the case of all " Byan " holdings of which the boundaries can be definitely pointed out, without dispute, and to such lands alone this rule will apply.

Rule 15.—No land containing timber trees is on any account to be measured as Byan.

Rule 16.—Against all Byan numbers, occupied or unoccupied, the word Byan is to be written in the measuring and classing books, and in the registers.

Rule 17.—One or more huts are often met with situated in small plots of land containing fruit trees or cultivation. Such plots are to be formed into Survey numbers of not less than half an acre, including sufficient waste land to make them up to that area. If no such fruit

trees or cultivation adjoin the huts, the Survey numbers should be made up to not less than half an acre from the waste land if adjacent. But land containing large forest trees must never be so included. Such house-site numbers will be entered in the measurers' and classers' books in the names of the persons who own the fruit trees or cultivation, or where these do not exist, in the names of the persons who own the huts.

Pardi Land.

Rule 18.—Pardi land, whether dry-crop, rice or garden, must be measured into Pardi numbers irrespective of area.

SECTION V.

Rules for the Division of Forest Lands.

Rule 1.—The forest lands of every village may be, if convenient, measured in one block or plot, in the first instance; when the map is plotted, these lands may be broken up into numbers of 250 to 500 acres on points fixed on the map, such as corners of cultivated plots of land, cart-roads, rivers, village boundaries and bends on them, and points where the boundaries of two or more villages meet. The latter are especially good points to take, as they are well known. The areas of these numbers may then be calculated by the computing scale.

Rule 2.—Blocks of forest intersected by a made-road should be made into separate numbers on each side of the road.

Rule 3.—In those parts of Kanara where the forests are very extensive and the villages far apart, Forest numbers may be made even up to 600 or 700 acres each.

Rule 4.—Kumri land must not be made into separate Revenue Survey numbers, but must be included in Forest numbers unless orders to the contrary should be given.

SECTION VI.

Rules for measuring Betta Land.

Rule 1.—When there is any Betta land to be measured in a village the garden land should be first measured, but the measurement of the Betta land should not be postponed till the whole of the garden land has been measured. As soon as a block of garden land has been measured, the Betta land belonging to this block should be measured. In order to get straight boundaries in Betta land, bends of a chain and under need not be taken notice of, but " Dharsod " made; and except when the Betta joins on to occupied land bends should be avoided as much as possible.

Rule 2.—In measuring Betta lands, it is not necessary to take offsets to every small bend along the side adjacent to cultivation; the other sides and corners should be laid down by measure ment, and the area due to the small bends on the side of cultivation should be taken by scale from the map.

Rule 3.—All the Betta land of a village is to be measured off into Survey numbers of a maximum area of 8 acres and a minimum of 4 acres. The measurer should simply divide into Survey numbers of the above dimensions all lands which are shown to him as Betta lands, provided that these are not " kans " or portions of forest containing reserved trees or other timber trees in large numbers.

Rule 4.—All land covered with trees that are pollarded, whether every year or in rotation, is to be regarded as Betta, and treated in accordance with Rule 3.

Rule 5.—No forest land with trees that have never been pollarded is to be included in Betta numbers except such insignificant areas as may be necessary for straightening the sides of the numbers.

Rule 6.—The total area of the Betta lands of a village should not fall short of 4 acres to each acre of garden. Any case that may be met with where this aggregate is not attained should be reported to the Superintendent for orders.

Rule 7.—In dividing Betta land into Survey numbers those made up to 8 acres each should adjoin the garden lands, the smaller numbers being placed on the side of the forest area.

Rule 8.—In Betta numbers mounds must be erected at the four corners and stones at all the bends.

Rule 9.—The cost of marks erected for Betta number must be charged to the Wargdar holding the garden land belonging to the Betta number.

Rule 10.—In testing Betta land, if the difference between original and test area does not exceed 10 per cent., it may pass, but all test of Betta must be entered in a separate return and not in the usual annual return.

Rule 11.—When there is much difficulty in measuring Betta land with the cross staff the theodolite may be used instead. In such cases the area will be taken off the map by the computing scale. All land fairly open should, however, be measured with the cross staff.

SECTION VII.

Boundary Marks.

Rule 1.—The dimensions for mounds given below are applicable to all descriptions of soil :—

Length at bottom	..	..	5 annas
Do. at top	..	..	3½ „
Breadth at bottom	..	..	2½ „
Do. at top	..	..	⅓ „
Height of mound	..	..	1½ „

Rule 2.—Trap or granite stones are to be one anna long, a quarter of an anna wide, and four fingers thick.

Rule 3.—In rice and garden land mounds are to be erected only at the corners of numbers and stones at the bends.

Rule 4.—In dry-crop land mounds are to be erected at the four corners of a number and stones at the bends. If the distance from one corner of a dry-crop number to the other is less than 25 chains, no intermediate mound is to be erected ; if the distance is above 25 but less than 50 chains, one mound is to be erected about half-way between the corners ; if the distance is more than 50 chains, mounds are to be erected at intervals of 20 chains.

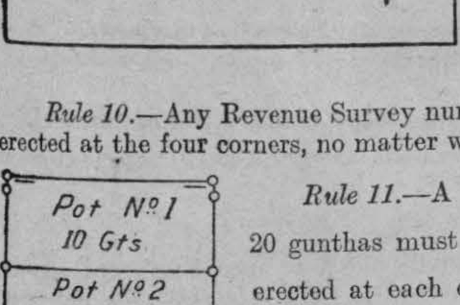
Rule 5.—It is not necessary that the intermediate mound mentioned above should be placed exactly mid-way between the two corners; it will be sufficient if in taking the "Bandh map" the mid-distance is approximately taken.

Rule 6.—In Forest numbers mounds must be erected at the four corners and at acute angles : stones must also be placed at the bends. One mound only is to be erected at the corners of these numbers, where they break off from made-roads; no mounds are to be erected parallel to the road. No stones are required at bends on the made-road in Forest numbers.

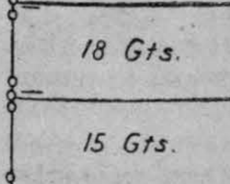
Rule 7.—When measuring Forest numbers if stones can be procured on the spot, they should be at once erected at the bends by the flag-men, and in order to mark the place where mounds will be required, the measurer should make the flag-men erect two stones to show where the ends of the mounds will fall, but these stones should not be purchased ones. If stones are not procurable, heaps of earth should be thrown up and daubed with whitewash.

Rule 8.—Whenever mounds are erected at the corners of a number a stone must be fixed in order to mark the exact spot where the corner of the number was made. This stone is not to be a purchased one, but one picked up out of the field and erected by the flag-holders. If a stone is not procurable, a heap of earth must be made and daubed with whitewash.

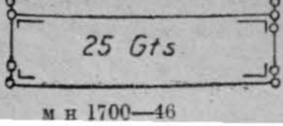
Rule 9.—Whenever a number is bounded by a well-defined mark, such as a water-course, or earthen embankment, or made-road, no mounds are to be erected, but stones must be fixed at the corners and bends. When the boundary of a number breaks off from either side of a well-defined mark, a mound must be erected (as shown in the marginal sketch) showing the direction of the boundary. If the embankment bounding a rice field is one anna wide and one foot three inches high and covered with grass, it is to be considered a permanent mark; but if less than those dimensions it is not to be considered as such. When a number is bounded by a natural stream, no stones are to be erected at the bends along it, but a stone and a mound showing the direction of the boundary of the number must be erected at the point where it breaks off from the stream.



Rule 10.—Any Revenue Survey number whose area exceeds 20 gunthas is to have mounds erected at the four corners, no matter whether it contains Pôt numbers or not.



Rule 11.—A Revenue Survey number which contains less than 20 gunthas must have one mound and stones as shown in the sketch erected at each corner of the longest sides of the number, no matter whether it contains Pôt numbers or not.



Rule 12.—If two numbers adjoin one another and the area of each is less than 20 gunthas, the marks must be erected according to Rule 11 above; but if a number whose area is less than 20 gunthas adjoins one whose area is less than 20 gunthas then the marks must be erected according to Rule 10 above.

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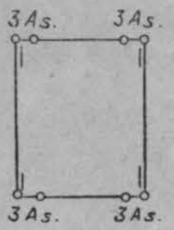
Rule 13.—Single stones of the size laid down in Rule 2 are to be erected at the corners and bends of Pôt numbers, half the stone being buried and the other half remaining above the ground.

Rule 14.—It was formerly the practice below the ghats to make use of laterite stones for marks: some stone of this description becomes rotten and crumbles away in few years, and the rayats are put to great expense in renewing the stones: it is therefore necessary that great care should be taken in selecting a good description of stone. Laterite stones should never be made use of if trap or granite stones can be procured. If laterite stones are used they must be two feet long and six inches square.

Rule 15.—Laterite stones are never to be erected in Gajni land, or in any place where they are liable to be touched by salt-water: in such places trap or granite stones only are to be used; these should be of the size directed in Rule 16.

Rule 16.—In Gajni and Wangan land, and in land near the sea-side, where owing to there being nothing but loose sand mounds will not stand; large stones, $1\frac{1}{3}$ annas long, should be erected at the corners of Revenue Survey numbers, and ordinary sized stones at the bends. Stones must be erected at all bends in Gajni land, no matter if it is bounded by a creek or a river.

Rule 17.—There will be a single large stone placed to show the corners of Survey numbers in Gajni, Wangan and sea-shore lands : this one large stone is to be at the corner point, and stones of the ordinary size adjacent to it at the interval of the length of a mound.



Rule 18.—Sometimes at places a little removed from the sea-shore, owing to there being a great deal of loose sand, it is doubtful whether mounds will stand. In such places mounds are not to be entirely discarded, but one mound must be erected at each corner on the longest sides of the number, and stones on the other sides at 3 annas distance from the corner stones as shown in this sketch.

Rule 19.—The above rule only applies to land near the sea which consists of nearly pure sand, and the Assistant Superintendent must carefully guard against it being applied where it is not intended to apply, always remembering that in all doubtful situations it is better to put mounds according to the usual rule than to apply the exceptional rule above. The rule does not apply to land in which there is a certain amount of soil mixed with the sand, where mounds may be expected to stand : in such land mounds must be erected according to the rules.

Rule 20.—The measurers are not to decide for themselves where mounds and where stones are to be erected, but must report to the Assistant Superintendent and obtain his orders, and after the Assistant has satisfied himself he will give the orders called for by the above rules.

Rule 21.—Measurers are in the habit of making no difference in the bottom and top widths of mounds but build them up like a wall: they must not do this, but must erect them according to rule, which will lessen the amount of labour.

Rule 22.—It is a common practice to excavate the earth for making a mound from close to the foot of the mound ; this must not be allowed, but a clear space of one anna all round the mound must be left untouched. If any measurer neglects to carry out this order, no excuse of his is to be listened to ; the mound must be thrown down, and the cost of doing this and erecting a fresh one recovered from the measurer.

Rule 23.—The space to be left between the sides of a made-road and the edge of a number should be as under :—

In dry-crop land including Betta, Byan and Kan	5 annas from the gutter.
In rice land	2 " "
In garden land	1 " "

Where there is no gutter the above distances are to be taken from the side of the road.

SECTION VIII.

The Map.

Rule 1.—When the holdings in a village are very small, the map must be plotted double the usual scale. As a rule this will be the case in villages below the Ghats ; but should a measurer find the holdings in the village to which he is sent are large, he must report the circumstance to the Assistant, who will decide on what scale the map should be plotted.

Rule 2.—In measuring any village which has lands of other villages included and mixed up with its own lands, those included lands should be measured and numbered at the same time with the lands of the including village in the ordinary course of measurement, an explanatory note being written in the measurer's book opposite the numbers in question. No separate books need be kept for such numbers.

Rule 3.—A note should be written on every copy of the map stating that numbers so and so belong to such and such a village.

Rule 4.—And a similar note should be written at the end of the Sud. For after convenience sake it will be expedient that these included numbers have their detail shown separately at the end of the Sud.

Rule 5.—No separate maps need be made of included numbers; they can be easily found on the map of the village in which they are included.

Rule 6.—Majrehs or hamlets in jungle district need not, if they adjoin their Moujeh or superior village, have their boundaries separately defined : one line of boundary may include both Majreh and Moujeh.

Rule 7.—If, however, in jungle districts a Majreh, as is sometimes the case, is detached from its superior village, and does not in any part adjoin it, then the boundary of the Majreh must be separately defined, since a Majreh of one village (Moujeh) may not be included in the boundary of another village (Moujeh).

Rule 8.—But in some parts, especially below the Ghats, it will be inconvenient to include Majrehs in one map with their superior villages, as the map will be of an awkward size, and it will be more convenient in many ways there to measure Majrehs as separate villages: in such cases this should accordingly be done. When, however, it is not in any way inconvenient to include a Majreh within the same line of boundary as the superior village, it should be so included as both work and boundary marks will be saved.

Rule 9.—It is not necessary that every Majreh should be made into a separate map. Two or more adjacent Majrehs of one village may be included into one map, so long as the orders regarding size and number of numbers are observed.

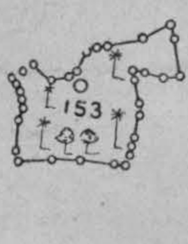
Rule 10.—No map is to exceed four feet by three feet in size, or to contain more than 300 numbers; and if a village, and its Majrehs, or if two or more Majrehs of a village have to be made into one map, then 2½ to 3 feet by 2 or 2¼ feet, with 180 to 230 numbers is the most desirable size. But, however few numbers a map may contain, it should be within about 3 feet by 2 feet in size, and it should not contain above 300 numbers, however small the map may be. This applies to portions of one large village, as well as to maps including a village and its Majrehs.

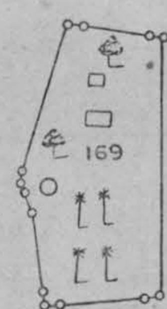
Rule 11.—When one or more Majrehs are, with or without the Moujeh, made into a separate village, the names of all the Majrehs are to be written on the village map, Sud, Pahani sud, and classer's register, and shown in the annual return of work below the Moujeh in which they are included. When a Majreh is made into a separate village, or when two or more Majrehs are together made into a separate village, the names of the Majrehs and the Moujeh to which they belong must also be shown on the maps, and in the annual return of work. The object of this is to afford information as to what Majrehs have been measured and what not.

Rule 12.—Many numbers in Kanara are covered with coconut and other trees, and the measurers are in the habit of showing a great number of trees on the map, in consequence of which it is difficult to distinguish the figures denoting the number.

(1) In order to prevent an unnecessary number of trees being shown on the map in future, it is laid down that if a number is one acre or less in area, no matter how many trees there may be on the ground, not more than (4) four are to be shown on the map. If a number is more than an acre in area, no matter what size the number may be, or how many trees there may be on the ground, it will suffice to show from 5 to 7 trees on the map according to the size of the number.

(2) The figures denoting a number must not be made smaller than shown in the example below :—





Rule 13.—In order to ensure the boundaries of villages being correctly laid down it is necessary that measurers should carefully compare the boundary line shown on the map of the village in which they are at work with the boundaries shown on the maps of the adjoining villages, and if the boundaries do not coincide they must at once report the fact to the Assistant Superintendent for orders.

Rule 14.—On a measurer being appointed to a village he must at once ascertain whether any of the adjoining villages have been measured, and in case they have, whether he can obtain copies of the maps from the village officers. If the maps are not obtainable the measurer must within two days after commencing work report the circumstance to the Assistant

Superintendent, who will arrange for obtaining copies of the maps; and as soon as the measurer receives the maps he must be careful to see that he measures according to the mounds and stones shown on the maps of the adjoining villages.

SECTION IX.

THE MEASURER'S SUD.

Rule 1.—As the Survey numbers and Pôt numbers in Survey numbers in the Kanara district are often very small, the following rules are laid down for making the give-and-take (Dhar Sod) of annas in fixing the areas:—

Clause 1st.—Areas under 8 annas must be entered correct to the nearest anna.

Clause 2nd.—Areas from and over 8 annas and of less than 5 gunthas are to be entered in the Sud correct to the nearest even anna. If the area should contain exactly an odd number of annas the next even anna above the original area should be entered.

Clause 3rd.—Areas of from 5 to 10 gunthas are to be entered correct to the nearest half guntha.

Clause 4th.—Areas of more than 10 gunthas are to be entered to the nearest guntha.

Clause 5th.—The sum of the Pôt numbers entered is to be taken as the area of the Survey number.

Clause 6th.—The above adjustments are to be made both in the unculturable and total areas, the rule applicable to the total area of the Survey number or Pôt number being used to fix the detail area (dry-crop, rice, garden and unculturable) of that number.

Example.

Chalta No.	Pôt No.	Total Area as in Fair Field Book.	Unculturable Area as in Fair Field Book.	Total Area as confirmed and entered in the Sud by 'Dhar Sod.'	Unculturable Area as confirmed by 'Dhar Sod.'	Remaining Area.
		A. g. a. p.	A. g. a. p.	A. g. a. p.	A. g. a. p.	A. g. a. p.
41	1	0 17 3 0	0 3 9 0	0 17 0 0	0 4 0 0	0 13 0 0
	2	0 2 0 4	0 0 9 0	0 2 0 0	0 0 10 0	0 1 6 0
	3	0 5 13 6	0 2 11 0	0 6 0 0	0 3 0 0	0 3 0 0
	4	0 10 12 9	0 5 14 0	0 11 0 0	0 6 0 0	0 5 0 0
	5	0 8 10 0	0 4 7 0	0 8 8 0	0 4 8 0	0 4 0 0
			Total ..	1 4 8 0	0 18 2 0	0 26 6 0
39	1	0 8 13 11	0 4 13 0	0 9 0 0	0 5 0 0	0 4 0 0
	2	0 9 2 4	0 2 4 0	0 9 0 0	0 2 0 0	0 7 0 0
	3	0 3 4 0	0 1 7 0	0 3 4 0	0 1 8 0	0 1 12 0
	4	0 8 2 2	0 5 2 0	0 8 0 0	0 5 0 0	0 3 0 0
	5	0 2 7 3	0 1 3 0	0 2 8 0	0 1 4 0	0 1 4 0
	6	0 2 7 14	0 1 0 0	0 2 8 0	0 1 0 0	0 1 8 0
	7	0 5 3 6	0 2 4 0	0 5 0 0	0 2 0 0	0 3 0 0
	8	0 0 7 4	....	0 0 7 0	....	0 0 7 0
			Total ..	0 39 11 0	0 17 12 0	0 21 15 0

SECTION X.

RULES FOR THEODOLITE MEASURERS.

CHAPTER I.

Village Measurement.

Rule 1.—When a measurer is appointed to do the theodolite work of a village or group of villages, the first thing is to mark out the boundary, and to find the marks that have been erected on the boundaries of villages already measured.

Rule 2.—If a flag can be erected at a point which is visible from a distance, it should be fixed in by three intersections from theodolite stations in the cultivated land or on made roads.

Rule 3.—If the points to be fixed are situated in a flat forest so that flags visible at a distance cannot be erected, they may be fixed in by working up to them through the clearest part of the forest in the same way as a traverse survey is done.

Rule 4.—In this case the greatest care must be taken to make the stations as far apart as possible; and as a constant check on the work, the bearing of the north point must be observed at every station as well as the backward angle.

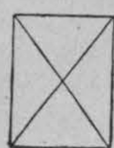
Rule 5.—When a point on the boundary is fixed in this manner, it must be confirmed by an independent line, to at least one other known point; or back again by a different route to the original station. This rule must be strictly observed in every case; or errors will be sure to occur.

Rule 6.—Measurers should always fix in a point by intersections from a distance if it is possible to do so in preference to measuring up to it from station to station; this latter method being specially liable to error and taking much time.

Rule 7.—If the cultivated lands of the village have been previously measured with cross staff, the measurer should make his first station at one or other end of the base line; or at some convenient intermediate spot on the base line; so as to be able to take its direction and fix in the boundaries, etc., with reference to the cultivated lands already measured. In this case the cross staff measurer must plot his work first upon a separate piece of mapping paper and afterwards transfer it to the map when his base line has been fixed in.

Rule 8.—If the cultivated lands have to be measured after theodolite work is finished, the measurer should choose for his first station a convenient spot from which he can fix a base line passing through the cultivated lands, and which the cross staff measurer will afterwards take up as the base line for the cross staff measurements. In this case he must put up flag-staffs or marks of a permanent nature, which he must warn the villagers not to remove, and which the cross staff measurer will have no difficulty in finding.

Rule 9.—At every place where the boundary of another village meets the boundary of the village under measurement, the measurer should put up a permanent mark (Raj Dagad). These stones should be 2 feet long and 4 inches square, with a cross cut on the top, as shown below:—



Rule 10.—When, as is commonly the case in Kanara, the villagers of two adjacent villages show a small stream passing in a zigzag course through thick forest, as forming the boundary between two villages there is no necessity to take every bend made by the stream, but when measuring along that boundary, the measurer must make his stations pretty near the stream through the clearest part of the forest, and fix its course by offsets taken at every 20 chains. But rivers and large streams must be laid down according to their course.

Rule 11.—When the measurer is fixing the boundaries of a village, he must send for the village officers of the adjacent villages also, so that they may know where the boundary marks are when their village is being surveyed, and that no boundary disputes may afterwards occur.

Rule 12.—Should there be a boundary dispute in the forest between two villages, the measurer must measure it off at once and enter it in dotted lines in the maps of both villages, and send a copy of the boundary dispute map to the Assistant Superintendent, who will give further orders regarding the disputed land, when the dispute has been settled; and the necessary alterations can then easily be made in the maps of both villages.

Rule 13.—When the boundary has been laid down in this way, the theodolite measurer must proceed to fix in a " base line " for any cultivated land for which he has not already laid one down. He must then lay down the roads and any streams passing through the jungle which are large enough to be shown on the map.

Rule 14.—The theodolite measurer will always fix in the north point on the village map and will write a memorandum as follows : " North fixed by theodolite."

CHAPTER II.

Road Measurement.

Rule 1.—When a measurer is ordered to measure roads, with a view to ascertaining the area and demarcating forest and boundaries of villages included between them, he should in starting at one place, as directed, make his first and second stations on one side of the road, where there will be no difficulty or hindrance to putting up permanent marks.

Rule 2.—In measuring along the road, there is no necessity to take offsets to the side of the road; but the measurer need only ascertain the breadth of it at starting and at long intervals, except where he observes any considerable increase or decrease in it. He should, however, note in his book opposite each theodolite station whether his station is on the right hand side, left hand side, or centre of the road.

Rule 3.—Should any important road cross or branch off from the road along which the measurer is working, he should make a station at that place, take angles showing the directions

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in which the road branches off on one or both sides, and make two permanent marks; writing in his book where the road comes from, to which village it goes, also at which stations the permanent marks were made; so that should it be necessary hereafter to measure along any one of these roads, the work can be taken up at the place where he has made the permanent marks, and angles and measurements taken in continuation of the work already done.

Rule 4.—The measurer should endeavour to ascertain where the boundaries of different villages, through the lands of which he is measuring, cross the road along which he is working, and he should note this in his book. He should note also the places where the streams and rivers cross the road, and show their breadth; he should also enter in his book the names of these streams or rivers, if they have any. Whenever the road passes through a village, the measurer should show in his book where the village begins and where it ends, and enter the name of the village. When the road goes through cultivated lands, he should show where the cultivation begins and where it ends, entering also the name of the village to which it belongs.

Rule 5.—If the measurements are carried on along a made-road, the measurer should take every opportunity of making a theodolite station, when convenient to do so, over the mile-stones, entering in his book which mile-stone it is. Also when he has to make permanent marks at certain intervals along the road, as ordered below, the mile-stone can be taken as one of the permanent marks, as it is not likely to be removed and may be depended upon as a permanent mark, at any rate for three or four years.

Rule 6.—The measurer should make marks of a permanent nature (Raj Dagad) that are likely to remain for three or four years, and which there will be no difficulty in finding:—

1st.—At the place where he begins work.

2nd.—At all places where important roads branch off from or cross the one under measurement.

3rd.—At all places where important rivers cross the road.

4th.—At all places where the boundaries of villages cross the road.

5th.—At all places where the road crosses cultivated land.

Should there be no such places along a road passing through extensive forests, he should make permanent marks at every two miles distance along the road; but should there be permanent marks erected as in the above enumerated cases, there is no necessity to put up any further permanent marks at every two miles distance in the intervals.

Rule 7.—When the measurer puts up permanent marks, he should always put up two, that is "a Raj Dagad" at the station where it is required, and a smaller flat-headed stone marked with a cross, and buried to within half an inch of the head, at the theodolite station next to it, either way as most convenient; because, on account of the difference in the north point as shown by different compasses, the correctness of the work would not be ensured when further angles and measurements are taken starting from one of the stations already fixed, unless two permanent marks are put up.

Rule 8.—At places where the measurer has to make permanent marks, should he be passing through cultivated and measured lands, the boundary marks, that is the corners of numbers, would be very good permanent marks to choose; but he should then, if possible, state in his book which corners and of what numbers he has fixed as permanent marks.

Rule 9.—Where permanent marks have to be erected, they must be put in such places that they may not be liable to disturbance by carts or animals. They should be buried so that the surface be level with the ground. The surface of the stone should be squared and a cross cut upon it, and clear directions for finding the stone must be made in the measurer's book, giving the distance and bearing of the stone from some recongisable mark, such as a building, bridge, or large tree.

Rule 10.—If a mile-stone or boundary-mark stone be used as a Raj Dagad, a cross must be cut upon it as usual.

Rule 11.—The theodolite measurer employed on road survey must plot the portion of the road passing through each village on separate pieces of mapping paper, on the scale usual for village maps in that part of the country. These plots must be sent, as soon as each is completed, to the Assistant, so that when the village is appointed, the work need not be done over again. Every "Raj Dagad" must be shown on these plots.

Chapter III.

Of other Roads.

Rule 1.—When roads of the descriptions given below go along the boundaries of "Shets," and are adopted as the common boundary of two "Numbers," they should not be included in the measurements of those "Numbers," but should be left separate, and have boundary marks erected on each side of them:—

1st.—Those along which traders convey their goods to a distance, either on pack bullocks or carts.

2nd.—Those to a neighbouring market, by which goods are constantly conveyed, on horses or bullocks.

3rd.—Those along which the cattles of the village under measurement, or those of another village, are constantly in the habit of going.

Rule 2.—When roads of the three descriptions given in the last rule are enclosed by garden or rice cultivation, or by permanent marks, such as hedges, old earthen ridges, or nullas, the distance between these enclosures should be adopted for their breadth; but in case they are not enclosed by garden, or rice cultivation, or by permanent marks, they should be made one chain broad.

Rule 3.—Roads not so much used by carts and bullocks as those mentioned in the first rule, but which go along the boundaries of "Shets," and are adopted as the common boundary of two "Numbers," are, like those roads to be excluded from the adjoining "Numbers" and to to have boundary marks on each side of them. Their breadth, when bounded by garden or rice cultivation, or by permanent marks, should be regulated by the distance between these enclosures; but in other cases they should be made 10 annas broad.

Rule 4.—With one exception (to which allusion will be made hereafter), roads not included in the above rules should not have boundary marks on each side, but should be included in adjoining "Numbers," and their areas should be recorded as unculturable. The following rules show how broad they should be made.

Rule 5.—Those which are enclosed by garden or rice cultivation, or by other permanent marks, should correspond in breadth with the distance between those marks.

Rule 6.—It frequently happens that the roads near villages, in consequence of being much used by cattle, have no permanent marks on each side, and are more than a chain in breadth. These roads should not have their breadth changed.

Rule 7.—When roads of the four descriptions alluded to in Rules 1st and 3rd do not form the boundaries of "Shets," and are not enclosed by garden or rice cultivation, or by permanent marks, then the breadths laid down in those rules respectively should be adopted for them; but in case these roads are enclosed by garden or rice cultivation, or by other permanent marks, then the distance between those marks should be adopted as their breadth.

Rule 8.—When small roads which are not used by the carts or bullocks of traders, or by the village carts, but are used merely as foot-paths, or by a single horse or bullock occasionally, are well defined by permanent marks on each side, they should be made as broad as the distance between these marks; but if they are not enclosed by permanent marks, four annas should be the breadth allowed for them.

Rule 9.—Neither earthen ridges nor stones should be put up as boundary marks on roads which, according to the preceding rules, are to be deducted from the contents of the "Number" through which they pass; and therefore in making marks for the erection of earthen ridges and stones, care should be taken not to make them where these roads and the lines of boundary intersect each other, but at least eight annas from the points of intersection, so as to leave the roadway free of obstruction.

Rule 10.—If the present roads by which the village cattle go out to graze, and for water, have permanent marks on each side, their breadth should be made equal to the distance between those marks, otherwise they should be made a chain broad. But if, in consequence of the land being uncultivated, there are no fixed roads for the cattle to go to graze and for water, such roads should be laid down; and for this purpose the opinion of the villagers should be taken as to where they should be. When the villagers wish to have the roads through Government land, they should be made a chain broad; but if they propose to have them through inam, or cultivated land, the "Inamdar" or "Kurda" of the land should be consulted, and a report, as to whether he agrees to the proposal, made to the Assistant Superintendent for his decision. When these roads go through "Numbers" their areas should be deducted from the contents of the "Numbers," but when they lie along the boundaries of "Numbers," they should not be included in them, but should have boundary marks erected on each side, in the same way as the roads alluded to in Rules 1 and 3.

Rule 11.—The breadths of the roads should, in general, be made according to the directions given in the preceding rules, but in fixing on the breadth for each road, the measurer should consult the villagers, and not act entirely on his own judgment. Should their opinion at any time differ from his own, or should their wishes be in opposition to any of the above rules, the measurer should refer the point in dispute for the decision of the Assistant Superintendent.

Rule 12.—The above rules are not applicable to made-roads, which are never to be included in the "Numbers" adjoining them. In common with other roads so excluded, these also should have boundary marks erected on each side, and these marks should be erected at the distance of five annas from the side trenches. Should, however, a made-road pass through "Shets" of rice or garden cultivation, so that the enforcement of this rule would subject the "Kurda" to a great loss, then a report of the case should be made to the Assistant Superintendent, and directions obtained from him on the subject.

SECTION XI.

Rules under which "Hadi" or "Kumki" lands may be acquired.

Rule 1.—All "Hadi" or "Kumki" lands must be applied for in writing by the person who claims the usufruct.

Rule 2.—The applicant must show beyond doubt that he has hitherto been in the enjoyment of the "Hadi" to which he lays claim, and point out undoubted "Wahiwat" (usage) in the Forest.

Rule 3.—He must agree to pay a rent, which will be fixed hereafter, but which in no case will exceed the maximum dry-crop rate of the district.

Rule 4.—He must agree not to cut down any trees, or boughs of the same, and to pollard only to the extent of the small lateral twigs thrown out in the rains. A right to gather fruit, fallen leaves, collect deadwood, cut undergrowth, thorns, and graze cattle, will be conceded.

Rule 5.—"Hadi" lands will not be entered in the applicant's Khata; these will be shown separately in the village registers as Government property, and the name of the person who enjoys the usufruct as "Wahiwatdar," and such "Wahiwatdar" must agree to give up the whole or a portion of any "Hadi," should it be hereafter required by Government for "public" purposes; or on parting by resignation, sale or otherwise with the garden land in respect of which such "Hadi" land is enjoyed. In the first case compensation would only be given for any building or wall, etc., which may have been erected at the "Wahiwatdar's" expense.

Rule 6.—The applicant must agree to provide, at his own expense, flag-holders, coolies, etc., at the time of measurement and classification, and to erect all necessary boundary marks.

Rule 7.—In short, all privileges in "Hadi" lands formerly enjoyed will be respected, but the trees, as before, must be kept intact and uninjured.

Rule 8.—The village officers must corroborate each application for "Hadi" land, and write and sign a "Shera" to the effect that the applicant thoroughly understands and agrees to the terms on which "Hadi" lands may be held. The applicant must also sign the village officer's Shera.

SECTION XII.

General Subjects.

Rule 1.—Each measurer will be allowed two chain-men and six flag-holders when working in Kanara. When a measurer goes to a village, he should explain to the rayats that unless they choose to supply the requisite number of men for carrying on the work, they will be supplied and paid for by Government, the cost being recovered from the rayats.

Rule 2.—The Mamlatdars in Kanara not being able to supply peons for carrying the post, Assistants are allowed to take on a peon for this purpose when in Kanara; but he must be changed as soon as the establishment leaves the Kanara district.

Rule 3.—For the future all expenses incurred on account of measuring Forest numbers must be entered in a separate account. When the village accounts are being prepared, an account according to a form given in these rules must be made out and sent in with the rest of the accounts in order that the amount may be recovered from the Forest Department.

Rule 4.—Owing to there being often no record left by the measurers, when giving over unfinished villages to another establishement, the establishment to which they are given over has great difficulty in finding out what work has to be done. In order to put a stop to this Assistants must make each measurer make out a return of exactly what work is finished and what unfinished, in any unfinished village, before giving the papers over to another establishment. If there are more measurers than one employed in the village, each measurer must make a separate return of the state of his work. Each measurer must state how many numbers have been plotted on the map, how many numbers remain unplotted; and if they cannot be correctly plotted, he must show their position on the map in pencil as accurately as he can, so that it may be seen at a glance what numbers adjoin one another. The return must show in how many numbers the boundary-mark inspection has been completed and in how many it remains to be done; what entries remain to be made in the bandh book and fair field book. This return must be stuck in by each measurer at the beginning of his last fair field book; and Assistants will be held responsible that the information is complete and correct. Assistants, at the time of giving over the village papers, must make a report to the Superintendent that a return, fully explaining the state of the work in each village, has been sent with them.

Rule 5.—It is a common practice for measurers when appointed to a village to measure all the rice land, leaving the garden land unmeasured. In future, the measurers must measure continuously, taking in hand the land adjacent to numbers previously measured, without skipping any intermediate land, unless for sufficient reason, such as standing water in Wangan. Such cases should be reported to the Assistant Superintendent for orders.

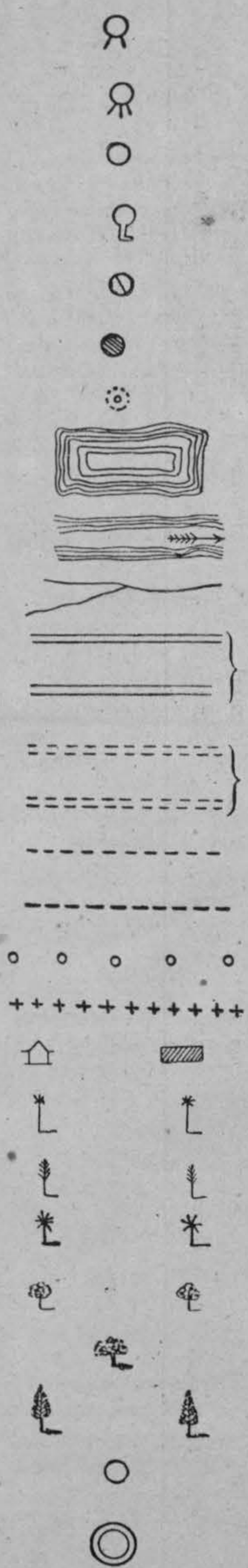
Rule 6.—All previous orders are cancelled, and the work in Kanara is to be carried on according to these rules. Should any measurer be in doubt about how to carry out the rules he must report to the Assistant Superintendent for orders.

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Form referred to in Rule 3, Section XII.

Name of District.	Name of Taluka.	Numbers in Order.	Name of Village.	Total Forest Numbers.	Details.						Total of Cols. 8 and 11.	Amount to be recoverd on account of Flag-holders and Bandh Peon.			Total of Columns 12 and 15.	Amount recovered.	Amount to be re-covered.
					Cost of Mounds.			Cost of Stone.									
					Number of Mounds	Cost of each Mound.	Total Cost.	Total number of Stones.	Cost of each Stone.	Total Cost of Stones.		Flag-holders.	Peon.	Total.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
							As. p.						Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Kanara ..	..	1	..	2	13	..	..	5	..	..	..	..	4 0 0	4 0 0	4 0 0	4 0 0	..
		2	..	3	8	..	..	8	..	..	..	..	6 10 7	6 10 7	6 10 7	6 10 7	..
				5	21	..	..	13	..	..	..	..	10 10 7	10 10 7	10 10 7	10 10 7	..
Do. ..	..		..	3	29	..	..	17	..	..	..	..	6 3 1	6 3 1	6 3 1	6 3 1	..
			..	3	23	4 as.	5 12	10	..	..	5 12	..	9 7 3	9 7 3	15 3 3	15 3 3	..
				6	52	4 as.	5 12	27	..	..	5 12	..	15 10 4	15 10 4	21 6 4	21 6 4	..
			Total ..	11	73	4	5 12	40	..	..	5 12	..	26 4 11	26 4 11	32 0 11	32 0 11	..

Symbols used in the Revenue Survey Department.



A well with one môt.

A well with two môts.

A well without a môt, but in repair and formerly used for irrigation.

A well with steps.

A well without môt and steps, and never used for the purpose of irrigation.

A dry well, but in good repair.

An old dry well out of repair.

A tank.

A large Nulla with budki.

A small Nulla.

Roads which form the boundaries of "Numbers" and are one chain and ten annas in breadth.

Roads which pass through "Numbers" of one chain and ten annas in breadth.

A foot-path.

Boundary ridges, or mounds.

Boundary stones.

A hedge.

Temples and houses.

Coconut trees.

Betelnut trees.

Toddy trees.

Tamarind, mango, and jack trees.

A Wad tree.

Other kinds of large trees.

A station in Theodolite measurement.

A tower.

KANARA CLASSING RULES.

(Applicable to Below-Ghaut Talukas only.)

SECTION I.

Rule I.—The divisions of land to be taken into consideration are "Khushki," "Tari," "Pulan" and "Bagayet."

Pulan.—1. The term Pulan is to be applied to the soil of such level sandy plains as are in the immediate neighbourhood of the sea and to the earthy soil of land formed by alluvial deposit, such as flat level plains in the vicinity of rivers, or islands in rivers. Pulan being of such a nature that it is easily convertible into rice land should be classed as Tari with sixth water class.

2. All classification is to be executed according to productive quality, which it is the object of these Rules to provide for as far as possible. But cases may occur in which the productive quality appears to be lower than would be met by strict adherence to the Rules; all such cases the Classer will at once report in detail to the Officer in charge of the Establishment.

First order of soil.

Rule II.—The classification of Pulan and Tari lands is to be done according to the following 5 classes :—

1. First class. Soil pure earth, there being so slight an admixture of sand in it that it is not plainly perceptible.

2. Second class. Soil consisting chiefly of earth but having a slight admixture of sand.

3. Third class. Soil consisting of earth and sand in about equal proportions, the proportion of sand being so great that the soil cannot be turned up in clods.

4. Fourth class. Soil consisting of very little earth with a great deal of sand, the proportion of sand being so great that the soil when taken up in the hand feels as if it was of pure sand, but there being a slight admixture of earth in the soil gives it a reddish or yellowish colour.

5. Fifth class. Soil consisting chiefly of sand in which there is so little admixture of earth that it is not perceptible; this class applies only to the soil along the sea-shore.

6. The above five classes refer principally to lands on the sea-shore, on river banks, in valleys and plains below the hills, and should be considered as forming the 1st order of soil.

Depth of soil for above classes.

7. For the above 5 classes $1\frac{1}{4}$ hath is to be considered full depth, soil of less depth than $1\frac{1}{4}$ hath will not generally be found in level fields, but in case shorter depths are met with anywhere, for every quarter hath of short depth the classification must be decreased by one class according to the standard given for full depth soil, by which it is possible for soil to class as low as 7th class.

Deteriorating faults.

8. In classing the soil according to the above five classes, should there exist besides sand in the soil coarse gravel or grit such as to affect the productive quality of the soil, a fault for Walsar should be given and the classification reduced.

Second order of soil.

Rule III.—Second order of soil :—

1. Lands on hill-sides or in more or less elevated situations will be classed as a second order of soil as follows :—

Land of good and fine quality, composed of pure earth and free from deteriorating faults and of full depth, that is $1\frac{1}{4}$ hath, to be considered the 1st class of the 2nd order and valued at 14 annas.

2. In land of the second order, deteriorating faults for each of which a reduction of one or half a class should be made, are as follows :—

1. Excessive sand	..Reswat.
2. Grit or coarse gravel	..Walsar.
3. Very high halias, narrow pieces of land difficult to cultivate ..	..Utarwat.

3. In the inferior soils of the second order, reductions in the class and valuation to be made on the following principles :—

For each ¼ hath reduction in depth the classification must be reduced one class, and for each fault the classification will be similarly reduced a half or a whole class, by which it is possible for lands of the second order to class as low as 8th class.

Examples.

1. Thus if the depth is 1¼ hath and there is such an admixture of coarse particles (Walsar) as to deteriorate the productive qualities of the soil, one fault will be given for Walsar and the classification becomes 12 annas.

2. If soil as above is found with a depth of one hath only, the classification becomes 10 annas.

3. In case the soil is very coarse in texture and of inferior productive quality, two faults for Walsar may be given and classification reduced at full depth to 10 annas.

4. The first class of the second order it is not expected will often be met with; it applies to soil of such a kind as would be 1st if in the first order and differs only from it in being in an elevated situation in or on the slope of hills. It is expected that these soils of the 2nd order will generally range from 12 to 8 annas classification according to depth and quality, though some of poor quality and very short depth may class even still lower.

5. The nature of the soil and freedom from fault must not be judged from the superficial soil, it must be dug up to the depth of 5 or 6 inches and the quality of the subsoil ascertained.

6. All Khushki lands must be classed as second order of soil.

Value of soil classes.

Rule IV.—Valuation in annas for the first and 2nd orders of soils to be as follows :—

Soil class.	First order.	Second order.
	Value annas.	Value annas.
1st	16	0
2nd	14	14
3rd	12	12
4th	10	10
5th	8	8
6th	6	6
7th	4½	4½
8th	0	3

Rule V.—The water classification for Tari lands to be as follows :—

Rice first water class.

1st Water class = 1 to 2 Annas. Clause 1. Water received by natural flow from a nullah or tank, or from a spring, or water-hole, the supply of water lasting in this way throughout the year, so that good sugarcane crops or two rice crops can be grown the same year.

Exceptions or faults to 1st class.

1. Should the supply of water be as shown in Clause 1 of the above Rule, but received from a nullah or tank, or from a spring or water-hole by means of a lift not exceeding 1½ yards in height, then reduce by half a class.

2. When received from a nullah or tank, or from a spring or water-hole by means of a lift exceeding 1½ yards in height, then reduce by one class.

3. When land is adjacent to Gajni and liable to be injured by salt water, a reduction of one class is to be made.

Rice second water class.

2nd Water class = 2 to 3 Annas. Clause 1. Water received by natural flow from a nullah or tank, or from a spring, or water-hole, the supply of water lasting only to the end of January and admitting of one crop of rice followed by a crop of grain or vegetables, but not a second crop of rice.

2. When in consequence of there being sufficient moisture in the ground a green crop can be obtained after the rice crop is taken up.

Exceptions or faults to 2nd class.

1. Should the supply of water be as shown in Clause 1 of the above Rule but received from a nullah or tank, or from a spring or water-hole by means of a lift not exceeding 1½ yards in height, then reduce by half a class.

2. When received from a nullah or tank, or from a spring, or water-hole by means of a lift exceeding 1½ yards in height, then reduce by one class.

3. When land is adjacent to Gajni and liable to be injured by salt water, a reduction of one class is to be made.

Rice third water class.

3rd Water class = 3 Annas. Low-lying land producing one good and certain rice crop without irrigation from tank or stream, the supply of water being derived from higher ground.

2. Where water is close to the surface and the soil being of a loose texture the water is easily obtained from dug-out holes, and therefore sugarcane crops can be grown occasionally. Existing wells in neighbouring fields will afford a means of judging whether or not water is close to the surface.

Exception or fault to 3rd class.

1. If land under the 3rd water class is adjacent to Gajni land and liable to be injured by salt water, a reduction of half a class is to be made.

Rice fourth water class.

4th Water class = 4 Annas. Clause 1. Land producing only one rice crop without irrigation, in rather an elevated situation, but still under the advantage of having higher ground above it from which surface rain water can drain on to it.

Rice fifth water class.

5th Water class = 5 Annas. Land producing only one rice crop without irrigation and that with great uncertainty in consequence of its lying in an elevated situation and without the advantage of higher ground above from which surface rain water could drain on to it.

Pulan sixth water class.

6th Water class = 6 Annas. Applies only to Pulan.

Class of water for rice lands derived from wells.

Rule VI.—When water supply as described under the heads 1st water class and 2nd water class is derived from a paka well and not from a nullah or tank, a reduction of half a class lower than is laid down in those rules will be made.

Class of water in lands producing only one Wangan crop.

Rule VII.—There is some land which produces a Wangan or hot weather rice crop only without any previous monsoon crop owing to the difficulty of draining the land during the rains: in this land water class is to be fixed as third.

Gajni land.

Rule VIII.—Gajni land is that which is more or less overflowed by salt water, and on which particular kinds of rice are grown which are not grown on sweet rice land such as "Kagah" and "Kungah." These lands must be classed as follows :—

Soil class.	Water class.
4th = 10 Annas	4th = 4 Annas.
5th = 8 ,, ...	5th = 5 ,,
6th = 6 ,, ...	6th = 6 ,,

Gajni fourth soil class.

Gajni land which is far up rivers and creeks, where the water is but little brackish, and where on account of the distance from the sea, the embankments protecting the land from being inundated by brackish water during the rise of the tides, are seldom injured.

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Gajni fifth soil class.

Gajni land which is liable during the rise of the ordinary high tides to be inundated by salt water, but on account of its favourable situation is quickly left bare. The embankments protecting such Gajni land from being inundated by salt water during the rise of the tide are often liable to injury.

Gajni soil sixth class.

Such Gajni land as on account of its proximity to the sea is liable to be quickly inundated by salt water during the rise of the tide, and on account of its exposed situation the embankments protecting it from salt water are very liable to much injury.

Faults in Gajni.

In Gajni lands small streams and water-runs for which Kharab is not deducted, should be considered a deteriorating fault and reduction of one or half a class may be made on account of "Dhupan." This reduction in soil classification carries with it a similar reduction in water classification.

Gajni water class.

1. All Gajni lands coming under 4th soil classification to have 4th water class.
2. All Gajni lands coming under 5th soil classification to have 5th water class.
3. All Gajni lands coming under 6th soil classification to have 6th water class.

Mithagar lands.

Rule IX.—Whereas in Mithagar numbers the land is now prepared for the production of salt, it cannot be classed as soil, but as it is necessary to ascertain the value of the land as it would be if it was not Mithagar, the classification of soil and water must be entered from an average taken of the classification of surrounding numbers. These numbers should be entered in the Registers under a separate heading as Mithagar numbers.

Garden lands.

Rule X.—The soil classification of garden lands to be as follows :—

Soil Class.	Annas.
1st	16
2nd	14
3rd	12
4th	10

Gardens in plains.

1. For gardens in plains or valley or where rising ground is slight and the surface even classes 1st and 2nd are to be applied.

First soil class.

Depth 1¼ hath—Soil pure earth or a mixture of sand and earth in equal proportions.

Second soil class.

1st. Depth 1¼ hath—Soil consisting of earth and sand but in which the proportion of earth is so small that it cannot be noticed except for the reddish or yellowish tinge imparted to the soil by the existence of earth.

2nd. Soil on the sea-shore consisting of pure sand.

Gardens on Hills.

2. For gardens on the slope of hills or rocky uneven places classes 3rd and 4th are to be applied.

Third soil class.

Land on the slopes of hills but the slopes moderate, or if steep, cut into well defined terraces under the trees.

Fourth soil class.

Land on steep slopes of hills, not cut into terraces, the coconut trees growing directly on the natural slope of the hill.

Depth of soil for garden classification.

Rule XI.—Should the depth of soil be less than $1\frac{1}{4}$ hath with a hard subsoil which will not easily admit of the roots of trees penetrating below the depth of the superficial soil, in the 1st and 2nd classes, then in each of these the classification can be reduced by one class.

Water classification for garden lands.

Rule XII.—The water classification of garden lands is to be as follows :—

First garden water class.

1st Water class = 1 to 2 annas—1st. Water received by natural flow from a nullah or tank, or from a spring or water-hole, the supply being sufficient to last throughout the year.

2nd. Land in such moist situations that supari or coconut trees grow well without irrigation.

Exceptions or faults to 1st class.

1. Should the supply of water be as shown in clause 1 of the above rule but received from a nullah or tank, or from a spring, or water-hole by means of a lift not exceeding $1\frac{1}{2}$ yards in height, then reduce by half a class.

2. When received from a nullah or tank, or from a spring, or water-hole by means of a lift exceeding $1\frac{1}{2}$ yards in height, then reduce one class.

Second garden water class.

2nd. Water class = 2 to 3 annas—1st. Water received by natural flow from a nullah or tank, or from a spring, or water-hole, the supply of water lasting only till the end of February.

2nd. Land in such moist situat ions that supari or coconut trees grow well on it without irrigation but situated in elevated places or very inaccessible situations among the hills.

Exceptions or faults to 2nd class.

1. Should the supply of water be as shown in clause 1 of this rule, but received from a nullah or tank, or from a spring, or water-hole by means of a lift not exceeding $1\frac{1}{2}$ yards in height, then reduce by half a class.

2. When received from a nullah or tank, or from a spring, or water-hole by means of a lift exceeding $1\frac{1}{2}$ yards, reduce by one class.

Garden water class below 3rd to 7th, water derived from wells.

The classes below 3rd are applicable to coconut and supari gardens which are irrigated by water raised from wells and carried by manual labour to the trees. The way to apply these classes is shown in the following table :—

Depth of well in yards.	Distance in chains of well from land under irrigation.		
	Under 5 chains.	Under 10 chains.	Over 10 chains.
Under 5 yards	4th	5th	6th
Over 5 yards	5th	6th	7th

1st. In cases of water having to be conveyed up a steep hill the class by the above table must be reduced by one class, but in no case to be reduced below 7th class.

2nd. If a well over 5 chains is used, but from the depth of the water below the surface it is evident that a water-giving hole could be got within 5 chains, then the class should not be lowered.

Water class for garden when water is derived from wells.

Rule XIII.—When the water supply as described under the heads 1st water class, and 2nd water class, is derived from a paka well and not from a nullah or tank, or from a spring or water-hole, a reduction of half a class lower than is laid down in those rules will be made.

Depths of wells.

Rule XIV.—The depths of such wells as have parapets or ledges round them must be taken from the place where the water is poured out.

Water class how to enter in classer's books.

Rule XV.—All the above water classes must be entered in the classer's book and Bagayet Takta in the same way as water classes for Patasthal Bagayet are entered.

Fruit trees.

Rule XVI.—Fruit trees in Bagayet land must always be carefully counted. In the country of coconut and supari trees a difference of not more than 10 per cent. will be allowed in the number of these trees counted by the classer, as compared with the number counted at test.

Sizes of coconut and supari trees.

Rule XVII.—The different sizes of coconut and supari trees to be taken into consider ation are as follows :—

Trees which have been newly planted and whose leaves only show above the ground, no portions of their stems being visible, must be considered as seedlings ("rops"). Trees the stems of which show above ground but which have not come into bearing must be considered as small trees. Such trees as have come into bearing, whether they are small or large, must be entered as large trees.

Scattered coconut trees when to be considered as Bagayet and when not.

Rule XVIII.—In some Bagayet numbers where the coconut trees are very far apart, it is difficult to decide what area of ground should be considered as Bagayet. In such cases all the trees which are at a distance of within two chains of one another must be considered as standing on one piece of Bagayet land, and the boundary of this piece must be fixed at a distance of half a chain from the outermost trees of the group standing on it.

Scattered coconut trees in rice or dry-crop lands.

Rule XIX.—In all cases where scattered coconut trees exist in land which is either Tari Khushki, or Pulan, the following course should be adopted :—

Scattered coconut trees in rice land.

1. Wherever scattered coconut trees are found in rice lands or on Halis, or embankments of rice land, the land must be classed as rice land and an increase on the number of trees is to be made according to the scale below :—

Coconut trees per acre.	Increase to be made.	
	On soil classification.	On water classification.
20 or over 20 trees.	2 Annas.	6 Pies.
From 15 to 19 trees.	1 do.	6 do.
From 10 to 14 trees.	2 do.	....
From 6 to 9 trees.	1½ do.	....
From 3 to 5 trees.	1 do.	....

Should there be less than three trees per acre, no increase is to be made.

Scattered coconut trees in dry-crop soil.

Wherever scattered coconut trees are found in dry-crop soil, Khushki or Pulan, if the trees are more than two chains apart, the land must be classed as Khushki or Pulan, and the number of trees are to be entered in a statement prepared day by day and attached to the Bagayet Takta, according to the following form :—

Number.	Pôt Number.	Acres.	Classification of Soil.	Trees.			State or condition of trees.	How watered and from what distance water is brought.	Remarks.
				Large.	Small.	Plants.			
1	2	3	4	5	6	7	8	9	10

The Assistant Superintendent will examine this statement at test time, and should he see any reason to remove any land appearing in it from the Khushki or Pulan heads to Bagayet, he will write an English remark to that effect in the statement showing the area he considers should be made Bagayet and the water class applicable which will be taken into consideration when the rates are fixed.

If scattered coconut trees in Khushki or Pulan lands are within two chains of one another, the land covered with the trees within that distance will be classed as Bagayet in accordance with Rule XVIII.

Rule XX.—Information regarding gardens and wells should be written out at time of classification as follows :—

1. For gardens irrigated by Kutcha wells, that is, wells which are not built up or permanent but merely holes dug out, the following information should be recorded :—

1. The depth from the surface to the water and the depth of water.

2. The number of coconut and supari trees and their state, whether good or otherwise.

3. Whether other Survey Nos. have a right to be supplied with water from the well or not, if so, what share of water each number is entitled to.

2. For gardens irrigated by Paka or built up and permanent wells, the following information should be recorded :—

1. Who sunk the well and when, whether he or his heirs are still in possession of it, if not who is.

2. The manner in which the well is built up and what contrivance is used for drawing up the water and if several how many.

3. The depth from the surface to the water and the depth of water.

4. Whether the well is being worked or not, at time of classification. If so, the number of hours it has been worked previous to classification and for how long it may be worked during the hot season.

5. Whether the water is sweet or brackish ; what kind of a spring it has and the direction from which it comes.

6. The number of coconut and supari trees and their condition, whether good or otherwise.

7. Whether other Survey numbers have a right to be supplied with water from the well or not, and if so, what share of water each number is entitled to.

Rule XXI.—In the Supa Taluka in some cases plantains and coffee will be found to be grown without the aid of irrigation or apparent natural moisture: in such cases the area under each of these crops will be entered in the usual form in the Bagayet Takta without showing any water class, but with a Shera stating if water was supplied by " Ghagri " or by any other artificial means or not.

Rule XXII.—As it is necessary to know whether gardens are good or not, whether the soil has good natural moisture or not and what kind of situations the gardens are in, all gardens should be gradated as follows :—

1. Gardens in low and level situations, where the natural moisture of the soil is good, that is in situations similar to where rice land would bear the 3rd water class, the garden should be gradated first and 1st class for natural moisture of soil entered.

2. Gardens in level situations but where the natural moisture of the soil is less in consequence of the soil being hard and water only found at greater depth, should be gradated as second and 2nd class for natural moisture of soil entered.

3. Gardens adjoining or on the slope of hills, where the trees will not flourish without being freely watered in consequence of there being no natural moisture of soil, should be gradated as third and 3rd class for natural moisture of soil entered.

The situations of all gardens should be thus defined in the information recorded in the Classer's books and should be entered in the Bagayet Taktas as shown below :—

The class for natural moisture of soil should be entered below the water class of the garden, divided from it by a horizontal line.

Water class.
$\frac{3}{1}$

Section II.

Rules for the classification of Hadi lands.

Rule 1.—Land thickly covered with jungle fairly accessible and having a preponderance of fruit trees, class as 1st, with assessment at annas 12.

Rule 2.—Land similar to the above but less accessible with few or no fruit trees, class as 2nd, with assessment at annas 8.

Rule 3.—Inaccessible land on steep slopes, producing only grass and scrub-jungle, class as 3rd, with assessment at annas 4.

Rule 4.—Each Hadi number must be divided into shares in the usual way and the average taken as its assessment.

Section III.

1. In the Kanara Zillah in many places there are no distinct village sites, the houses of the cultivators being situated in the fields, or wherever there are coconut gardens. The distances of numbers from the village site, or from the owners' houses must in such cases be taken according to the following rules :—

1st. The house of the owner of a number, or the site of any group of houses of the village, whichever of these two is nearest a number, that distance must be taken.

2nd. To uncultivated numbers the distance from the site of the nearest group of houses must be taken.

3rd. Distances within half a mile must be entered as half a mile. Distances above half a mile and up to 1 mile, must be entered as 1 mile. Distances above one mile and up to two miles, must be entered as two miles. Distances above two miles and up to three miles, must be entered as three miles. Distances above three miles must be entered as "above three miles."

2. The number in which the house is situated, from which the distance to a number has been taken, must be stated in paragraph 1 of the usual entries in the classer's book.

3. Often the houses of a village are scattered over many numbers ; when the distance from such village site has to be taken, all the houses that are within ten chains distance from each other must be considered as belonging to one group or village site, and the distance of a number from the nearest house in that site must be taken. Houses that may be at a distance of above 10 chains from such village site, are not to be considered as belonging to that site. Also any number of houses from four and upwards that may be above ten chains distance from such site, must be treated as a separate group or village site. A collection of fewer than four houses must not be treated as a village site.

4. The distance of a number from the place at which the cattle are watered in the hot weather must be entered in paragraph 3 of the usual entries in the classer's book, with a remark stating the place or number this distance has been taken from.

Section IV.

1. As the Survey numbers and Pôt numbers in Survey numbers in the Kanara District are often very small, the following Rules are laid down for making the give-and-take, "Dhar Sod," of annas in fixing the areas :—

Clause 1st.—Areas under 8 annas must be entered correct to the nearest anna.

Clause 2nd.—Areas from and over 8 annas and of less than 5 gunthas are to be entered in the Sud correct to the nearest even anna. If the area should contain exactly an odd number of annas the next even anna above the original area should be entered.

Clause 3rd.—Areas of from 5 to 10 gunthas are to be entered correct to the nearest half guntha.

Clause 4th.—Areas of more than 10 gunthas are to be entered to the nearest guntha.

Clause 5th.—The sum of the Pôt numbers entered is to be taken as the area of the Survey number.

Clause 6th.—The above adjustments are to be made both in the unculturable and total areas, the rule applicable to the total area of the Survey number or Pôt number being used to fix the detail area (dry-crop, rice, garden, and unculturable) of that number.

Example.

Chalta No.	Pôt No.	Total Area as in Fair Field Book.	Unculturable Area as in Fair Field Book.	Total Area as confirmed and entered in the Sud by 'Dhar Sod.'	Unculturable Area as confirmed by 'Dhar Sod.'	Remaining area.
		A. g. a. p.	A. g. a. p.	A. g. a. p.	A. g. a. p.	A. g. a. p.
41	1	0 17 3 0	0 3 9 0	0 17 0 0	0 4 0 0	0 13 0 0
	2	0 2 0 14	0 0 9 0	0 2 0 0	0 0 10 0	0 1 6 0
	3	0 5 13 6	0 2 11 0	0 6 0 0	0 3 0 0	0 3 0 0
	4	0 10 12 9	0 5 14 0	0 11 0 0	0 6 0 0	0 5 0 0
	5	0 8 10 0	0 4 7 0	0 8 8 0	0 4 8 0	0 4 0 0
			Total ..	1 4 8 0	0 18 2 0	0 26 6 0
39	1	0 8 13 11	0 4 13 0	0 9 0 0	0 5 0 0	0 4 0 0
	2	0 9 2 4	0 2 4 0	0 9 0 0	0 2 0 0	0 7 0 0
	3	0 3 4 0	0 1 7 0	0 3 4 0	0 1 8 0	0 1 12 0
	4	0 8 2 2	0 5 2 0	0 8 0 0	0 5 0 0	0 3 0 0
	5	0 2 7 3	0 1 3 0	0 2 8 0	0 1 4 0	0 1 4 0
	6	0 2 7 14	0 1 0 0	0 2 8 0	0 1 0 0	0 1 8 0
	7	0 5 3 6	0 2 4 0	0 5 0 0	0 2 0 0	0 3 0 0
	8	0 0 7 4	....	0 0 7 0	....	0 0 7 0
			Total ..	0 39 11 0	0 17 12 0	0 21 15 0

SECTION V.

1. The method of entering in the Classer's Book the acres of a "Survey number" according to "Pôt numbers" is as follows:—

Pôt No.	Name of Wargdar, etc.	Total acres. Acres Goontas.	Unculturable acres. Acres. Goontas.	Remaining culturable acres. Acres Goontas.
1	Shreeniwas Ramchandra..	K 0 ,, 15	0 ,, 0	0 ,, 15
		T 0 ,, 5	0 ,, 0	0 ,, 5
2	Gunesh Bullal..........	K 0 ,, 4	0 ,, 1	0 ,, 3
		B 0 ,, 15	0 ,, 0	0 ,, 15
3	Sadashew Narayan......	P 0 ,, 3	0 ,, 0	0 ,, 3
		T 0 ,, 17	0 ,, 2	0 ,, 15
		1 ,, 19	0 ,, 3	1 ,, 16

2. In showing the classification work of a number in the classer's book a sketch must first be drawn of the "Survey No." in which the "Pôt Nos." must be separately shown, then under this sketch of each Pôt No. must be drawn in which its classification must be entered. The average classification annas of each Pôt No. must be calculated separately.

3. Of the entries that are made by paragraphs under each "Survey number" the remarks in paras. 1, 2, 3 and 5 are chiefly applicable to Survey "Nos.;" they must therefore be written in the usual way.

4. Of the entries that are made by paragraphs under each Survey No. remarks regarding "Pôt Nos." necessary to be entered in paras. 4, 6, 7 and 8 may be entered together for all such "Pôt Nos.," the circumstances of which agree with the Measurer's entries. But the remark to be entered in those paras. for "Pôt Nos.," the circumstances of which differ from the Measurer's entries, must be entered separately by paras. under each main para. for each "Pôt Number."

5. The entries regarding Tari land may be made for all "Pôt Nos." that do not differ in their circumstances together in the same para., but when the circumstances differ, the entries for each "Pôt No." must be entered by separate paras. under each main para.

6. The usual entries by paras. regarding Bagayet land must be made separately for every "Pôt number."

7. A new form of "Bagayet Takta" has been printed for the Kanara District, which alone must be used. In cases of coconut and supari garden land the number of these trees must be entered according to their size in columns 17, 18, 19 and 20 of this "Bagayet Takta." All other fruit trees in such garden land must be entered in column 24.

SECTION VI.

1. The following instructions regarding the method of preparing the Registers and Pahani Suds are applicable to villages where the Survey Nos. contain Pôt Nos. and where there is Pulan soil.

2. The total acres of the Survey Nos., their Kharab, their Khushki Tari, and Bagayet acres and the "Dar" and "Akar" of the Khushki and Tari acres must be entered in the registers in black ink. The acres "Dar" and "Akar" of Pulan land must be entered in red ink. The acres "Dar" and "Akar" of Pulan land must be entered in the Tari columns of the registers, and for the purpose of distinguishing that land in the registers the letters P. T. must be entered in red ink against its acres.

3. The "Akar" of Pulan land be must calculated by the rates resulting in the Tari "Kayum Dar Jantri" from the soil classification and 6th water class. This water class and the "Kayum Dar" must be entered in the registers in red ink. At the end of the registers a note must be made to the effect that the acres against which the letters P. T. are entered are those of Pulan soil.

4. In the "Pahani Suds" the acres of Pulan soil must be entered in the column for the acres of Khushki soil and the letter P. placed against them to distinguish them; also a note must be made at the end of the "Pahani Sud" to the effect that the letter P. is entered against the acres of Pulan soil.

5. In entering in the "Pahani Sud" the acres of such Survey Nos. as have Pôt Nos. in them the acres of each of the Pôt Nos. must first be entered, and then beneath these the sum of the acres of the Pôt Nos. must be entered, so that the total acres of the different Survey Nos. may be known.

6. The directions given above for preparing the registers and "Pahani Suds" will be understood from the examples given in the accompanying forms of those papers.

7. When in accordance with Rule XXI, para. 1 of section 1, the increase made on rice land for scattered coconut trees as shown in the table, gives a soil classification of over 16 annas or a water classification higher than 1st, then the Register must be prepared for the rice land as of 1st class soil and 1st water class and a separate statement prepared according to the following form should be attached to the Register. In this form columns 1 to 4 should be filled in and column 5 left blank.

No.	Soil classification.	Water classification.	Fixed rate as entered in Register.	Fixed rate.
1	2	3	4	5

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